Original Articles.

REMARKS UPON THE EFFECTS OBSERVED IN THE USE OF MIXED TOXINS (COLEY) IN CERTAIN CASES OF SARCOMA.*

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THIS paper is based upon observations made since June, 1909, in the use of mixed toxins of streptococcus and bacillus prodigiosus (Coley) in 91 cases. Numbers enhance the value of statistics, other things being equal. I have, therefore, taken the liberty to include not only hospital cases but cases treated in private practice. Such cases appear in the statistics only. Case reports of the private cases have been excluded. I wish here to express my thanks to the members of this staff, through whose courtesy this study has been made possible.

Such a vast amount of data has accumulated and the time is so limited that I wish to confine the province of this paper to a consideration of the most practical phase of this subject, the end results. These 91 cases included every case in which the toxins were given. Some were under treatment too short a period to be of value in determining the efficiency of the toxins. Some were early cases in the series in which the doses were too small. Some cannot be traced by letters, visits to former homes, or state or city records. Some were cases in which no pathological report was obtained. Some were cases of microscopically proven carcinoma. Some were cases of proven sarcoma in which the toxins were administered as a prophylactic against recurrence after operations which might of themselves have cured (amputations without demonstrable metastases, orchidectomies with growths confined within tunica albuginea, etc.). Such cases are of value in a study of certain phases of this subject (character of reactions, site of injections, guides to the increase in the dose and the interval between injections, the concurrent or subsequent use of the x-ray or arsenical preparations, relief of pain, etc.), but obviously in a critical analysis to determine the efficiency of the toxins in the treatment of sarcoma such cases should not be considered and have, therefore, been excluded. There remain 32 cases; all of these were primary or recurrent inoperable sarcomata, or cases in which the disease could not be eradicated at operation. All were proven by microscopical examination. All were under treatment at least three weeks. In all cases the results were free from vitiation by concurrent treatment, with x-ray, or arsenical preparations. All living cases have been seen or heard from within three months, most within a month.

The series includes 24 males and 8 females. The age of the males varies from 14 to 65 years, average 35.3 years. The age of the females varies from 2 to 55 years, average 29.2 years. The average age of all cases is 33.8 years. The average duration of treatment was three months+. The average maximum dose was 11.9 minims. The maximum dose was 53 minims.

A hasty survey of this series shows many failures and a very small number of apparent cures. The treatment is most distressing. The results do not justify subjecting all cases of inoperable sarcoma to such suffering. The practical question, the humane question, is in what cases does this treatment offer the greatest expectation of benefit. Obviously, the answer to this question obtained by an analysis of so small a series of cases is not final but may be suggestive. Two avenues of analysis are open: first, according to the type of sarcoma; second, according to the tissue of origin or anatomical situation.

In this analysis the cases will be arranged in six groups determined by the effect of the toxins.

Group A includes those cases in which there was no appreciable effect (10 cases).

Group B includes those cases in which the growths softened but did not diminish in size. This softening may be fairly attributed to the toxins rather than to increased vascularity and cellularity associated with rapid growth, for it occurred at the site of injections. There were 5 such cases.

Group C includes those cases in which the growths disappeared, or practically disappeared, but returned. There were 5 such cases.

Example: J. H. K. House No. 177,039, a fireman of 25. Referred by Dr. Porter and Dr. Mumford. A large round-cell sarcoma of the right tonsil, size of ping-pong ball, pushing uvula to left, and of the right neck, 6 x 5 inches.

Pathological Report. (117-52.) Dr. H. F. Hartwell. "A small bit of tissue removed from a tumor shows microscopically tumor cells infiltrating muscular tissue. The cells composing the tumor are large round with very faintly staining cytoplasm and having deep staining nuclei. There are numerous bloodvessels which lie in close relation to the cells. Here and there are larger-sized cells with multiple nuclei which are frequently superimposed. There are a number of mitotic figures."

Treatment with toxins from July 18 to August 15, 1911. Sixteen injections. Maximum dose 18 minims. During first three weeks marked diminution in the size of the tonsil tumor which became very fluctuant. Tumor in the neck practically disappeared. After this, despite increasing doses with severe reactions, the tumors increased rapidly in size and the patient died September 14, 1911.

Example: G. P. O. P. D. No. 124,742. Italian of 47. Referred by Dr. Vincent. There was a firm ulcerating mass occupying the right tonsil, floor of

* Presented at meeting at Massachusetts General Hospital, March 27, 1914.

mouth, base of tongue, epiglottis, soft palate, and pharynx. Laryngoscopic examination impossible. He spoke only in a thick whisper, and could eat only liquids and very soft solids, much of which came out through nose.

Pathological Report. (128-121.) Dr. Hartwell. "Specimen consists of several pieces showing, on miscroscopical examination a richly cellular tumor composed of spindle cells which are arranged in narrow bands interlacing with one another and running in all directions. Spindle-cell sarcoma."

Mixed toxin treatment instituted and continued regularly for four and one-half months. Maximum dose, 10 minims. The mass softened and sloughed out cleanly. He gained in weight and color, was able to eat more food without losing any through nose, and could speak distinctly. Against advice he then insisted on returning to work. In five months he was a pale, emaciated man with metastases in the lung, neck, and belly, practically unable to eat or make self understood by speech. Died August 22, 1913.

Group D includes those cases in which growths disappeared but metastases simultaneously occurred. There were 5 such cases. I shall later give one in some detail.

Group E consists of one case in which the growth diminished in size but the tumor still persists.

A man of 39 with sloughing sarcoma of the kidney. He has gained 25 pounds and is free from symptoms but still has a firm discharging mass after two and one-half months of treatment.*

Group F consists of those cases which are apparent cures in which growths have disappeared and no metastases have occurred. There are 6 such cases. Records of all 6 I wish to present at the close of this paper for your judgment. They have remained apparently well since conclusion of treatment, respectively, 1 year, 2 months; 2 years; 2 years, 7 months; 2 years, 9 months; 2 years, 11 months; and 2 years, 11 months.

In Table I is shown an analysis according to the type of sarcoma. The spindle cell and round cell cases, with totals of 10 and 11 cases, respectively, and 2 apparent cures each, show nothing striking except perhaps that there were no apparent cures in the small spindle and large round cell cases. The melanotic cases, 3 in number, are curiously all in Group D. Two were cases of multiple subcutaneous nodules. Some of these were sloughed out but other growths simultaneously occurred. A similar case, which could not be included in this series, behaved similarly. The third was a single large recurrent mass.

* Referred by Dr. C. G. Mixter. Pathological report by Dr. W. F. Whitney. Patient last seen June 19, 1914, five and one-half months since toxins discontinued. Has gained 50 pounds since operation. Still continuously discharging sinus in flank leading to mass now reduced in size which is not tender and causes no discomfort. This may be a purely inflammatory residue or temporarily quiescent sarcoma. He refuses further operation.

FIG. 1.

FIG. 1 illustrates Case F. H. F., melanotic sarcoma, recorded in the text of the paper. The photograph was taken Feb. 13, 1912, three months after toxin treatment was instituted. Below is shown a scar one month after the sloughing out of two masses which became confluent, one $2\frac{1}{2} \times 1\frac{1}{2}$ inches, the other the size of an English walnut. The entire mass was sloughed out in one month (Jan., 1912). There is no evidence of recurrence. Above is shown a recurrence under treatment. This mass appeared Nov. 25, 1911, and increased in size till $3\frac{1}{2} \times 2 \times 1$ inches in Sept., 1912. At this time sloughing through several craters began with diminution in size. On Jan. 13, 1913, there was no evidence of growth, as is shown in next figure.

TABLE I.

ANALYSIS OF CASES ACCORDING TO TYPE OF SARCOMA.

GROUP		A	B	C	D	E	F
Spindle cell	Small cell		1	1	1		
	Large cell	1		1			1
	Fibro sarcoma	2	1				1
	Total, 10	3	2	2	1		2
Round cell	Small cell	1	1		1	1	2
	Large cell	3		2			
	Total, 11	4	1	2	1	1	2
Melanotic					3		
	Total, 3				3		
Giant cell		1	1				2
	Total, 4	1	1				2
Mixed cell		2	1	1			
	Total, 4	2	1	1			
	Totals 32	10	5	5	5	1	6

Fig. 2.

Fig. 2 illustrates the same case. Photograph taken May 1, 1913. Above is faintly shown a broad soft scar representing the site of tumor last mentioned. There is no evidence of disease and none ever appeared in this region up to time of death, Feb. 26, 1914. Below is shown a broad scar resulting after granulation of wound of excision of two masses (Mar. 12, 1913). Sections of these are shown in Figs. 3, 4, 5, and 6. The edges of this wound (6 x 2¾ inches) were brought together under considerable tension. In two places the sutures did not hold. The resulting scar was thick and fibrous and in the photograph suggests malignant recurrence. This was not the case. Up to time treatment was discontinued (Jan. 28, 1914), eight months after this photograph was taken, no recurrence took place in this scar.

F. H. F. An iron worker of 35. Referred by Dr. Risley. Under treatment two years, two months; seen 224 times; injected 195 times; maximum dose 53 minims. July 14, 1911, Dr. Homans excised, in the O. P. D., a growth of five-weeks' duration arising from a pigmented mole over the right scapular region.

Pathological Report. (117-73.) "Specimen for examination consists of a rounded tumor 3 cm. in diameter which is sessile and dark purplish red with a surrounding oval-shaped piece of skin and subcutaneous tissue, varying in width from 1 to 2 cm. Section shows the center of the tumor infiltrating the subcutaneous structures. Microscopical examination shows a richly cellular tumor containing much brownish yellow pigment. The cells appear to have an alveolar arrangement. They are fairly large and spindle-shaped with rather deeply-staining nuclei. The tumor seems to be surrounded by a tough layer of fibrous tissue but in places this fibrous tissue is very faint and the tumor appears to have gone beyond it. Melanotic sarcoma."

Oct. 26, 1911, Dr. Cobb excised, in the House, a recurrence to the outer side of old scar.

Pathological Report. (1110-129.) Dr. W. F. Whitney. "A piece of tissue from the shoulder measuring 6 x 4½ cm. in the midst of which was a coal black nodule 1½ cm. in diameter. Microscopical examination of the nodule showed large cells, many of them containing a black pigment with a little intercellular substance between and irregularly infiltrating into the periphery. Melanotic sarcoma."

I saw patient fifteen days later with recurrence in second scar 2½ x 1½ inches, and a palpable mass in the axilla the size of a pigeon's egg. Toxin treatment instituted. Within twelve days a mass the size sloughed out in one month, leaving a soft thin scar. The two masses became confluent but were entirely sloughed out in one month leaving a soft thin scar. During this time, however, a recurrence appeared in the upper scar which became in size 3½ x 2 x 1 inches. This whole mass was entirely sloughed out by Jan. 13, 1913. A pigmented mass appeared in the right pectoral region early in Jan., 1912. It ruptured in three weeks with local injections but increased in size until 3 x 2 inches. There were several erysipelatous attacks when whole pectoral region would be red, hot, tense, and tender with

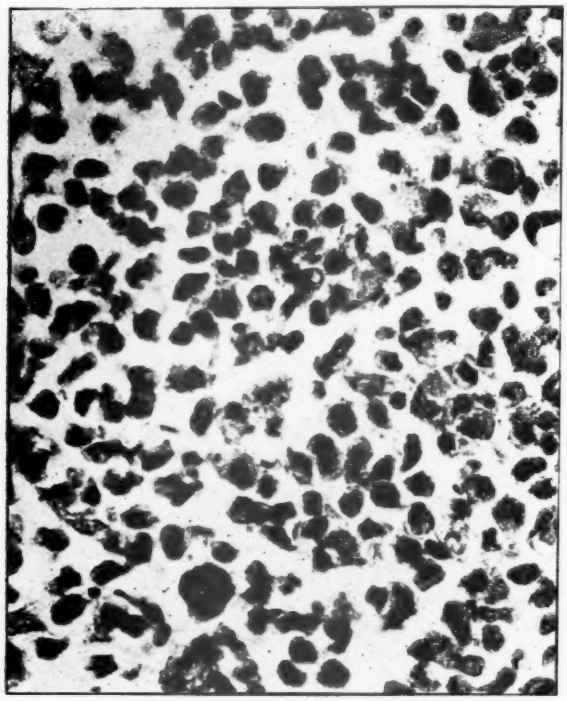

FIG. 3.

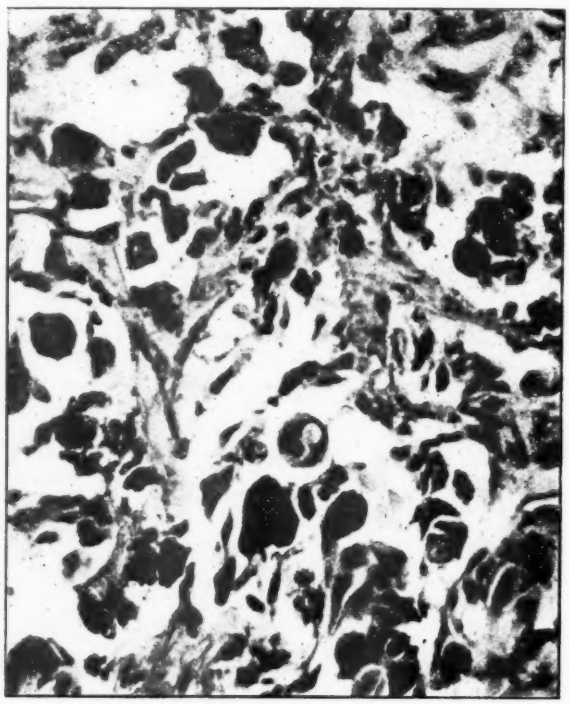

FIG. 4.

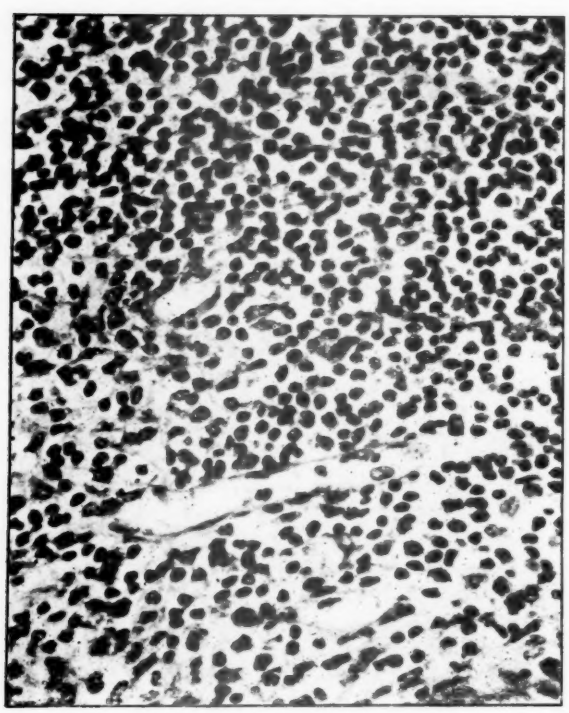

FIG. 5.

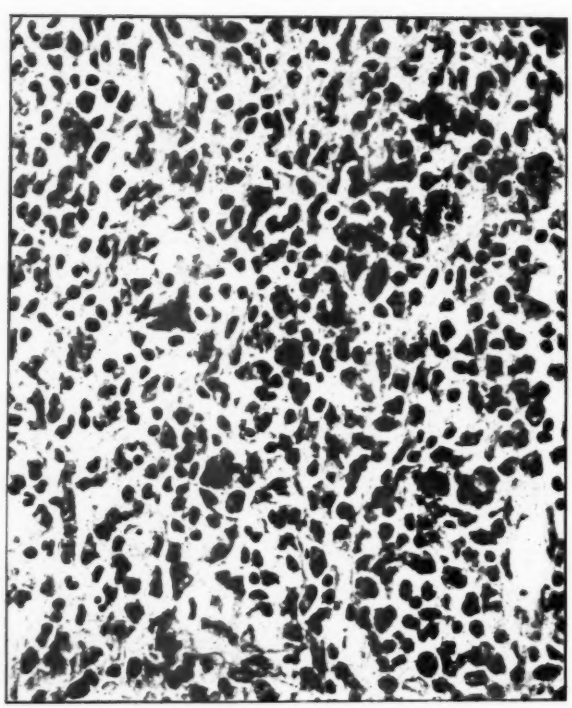

FIG. 6

FIGS. 3, 4, 5, and 6. For explanation see text.

appearance of a second gland in the axilla and another in the neck. The latter became the size of a cherry but entirely disappeared in one month. The axillary masses became the size of hen's and pigeon's eggs during these erysipelatous attacks but within a month became decreased to size of pigeon's and sparrow's eggs and never became any larger until treatment was discontinued eleven months later, *i.e* the upper axillary mass which was present when first seen (Nov. 10, 1911) was no larger and just as movable twenty-six months later when treatment was stopped (Jan. 28, 1914). The entire breast tumor (3 x 2 inches) sloughed out with continuous appearance of dark pigment by August, 1913, and never recurred. At this time patient was in excellent flesh with good appetite and no evidence of in-

ternal metastases. I was arranging with social service department for light employment. He then disappeared on a spree returning in nineteen days haggard and weak. Treatment was resumed but he never regained his former tolerance for toxins. The average dose for the last months was only 4.8 minims but the reactions were just as severe as he had experienced when taking 40 to 50 minims. New masses began to appear on abdomen, arms, breast, and back. He died February 26, 1914, with metastases in the spinal cord and abdomen.

The giant cell cases require some explanation. First, this designation is properly applied only to those growths in which there is an abundance of large multinuclear cells. Other types of connective tissue tumors may contain a few such cells, but this does not justify the above appellation. Again, there are pathologists and surgeons who maintain that these connective tissue growths with abundance of giant cells are true malignant tumors, *i.e.* capable of forming metastases. There are others who admit that such growths are prone to recurrence, but deny them malignancy in the sense of forming metastases. The name giant cell tumor, instead of giant cell sarcoma, has, therefore, been suggested. Again, Barrie, of New York, believes that the process is only inflammatory, an osteomyelitis. Without discussing these opinions it is true that many cases of this condition can be cured by one or several curettings or resection. Other cases, on account of size or situation may require amputation. Still others, probably the smallest group, cannot be cured by surgery alone. I refer in particular to more or less extensive involvement of the vertebrae. Complete removal may be impossible, and the recurrence may be still more inaccessible to the knife. My feeling at present is that in the majority of cases curetting or resection give such good results that toxins are not indicated. I believe, also, that toxins are not indicated in those cases in which amputation has been necessary. I do believe that their use is justifiable in those cases which defy complete surgical eradication. The two failures in this series were growths the size of a football and of a canteloupe, one of the ilium and sacrum, and one of the upper thigh. The two apparent successes will be considered later.

Of the 4 mixed cell sarcoma cases all were failures.

This analysis according to the type of sarcoma suggests, therefore, that toxins offer practically no expectation of benefit in multiple melanotic cases and mixed cell cases; that they may be legitimately tried on single melanotic growths and on certain cases of spindle, round, and giant cell tumors.

In Table 2 is shown an analysis of cases according to anatomical situation or tissue of origin. Of the intranasal and nasal accessory sinus cases it is striking that 5 of 7 are apparent cures. These include fibrosarcoma of the septum and ethmoid, giant cell sarcoma of the antrum and superior maxilla, large spindle cell sarcoma of ethmoid, small round cell sarcoma of the antrum and ethmoid, and small round cell sarcoma of the antrum, ethmoid, superior maxilla, posterior septum and nasopharynx.

TABLE II.

ANALYSIS OF CASES ACCORDING TO ANATOMICAL SITUATION AND TISSUE OF ORIGIN.

GROUP	A	B	C	D	E	F
Nose and sinuses			2			5
Tonsil		1	1			
Pharynx	1		1			
Bone (not giant cell)	4	1				
Giant cell	1					1(1)
Abdomen	(7)					
Cervical glands		1(1)	(3)	1		
Skin				4		
Miscellaneous	1 sperm. cord 2 thigh 1 pelvis	2 thigh	1 parotid		1 kidney	
Totals	10	5	5	5	1	6

Of the bone cases, exclusive of giant cell growths, there were 5 cases, all failures. Of giant cell cases there were 3, one failure and two apparent cures. One of the latter has been included elsewhere in the table and is indicated in parentheses. The other was a spine case and will be referred to later.

Of the abdominal cases, 7 in number, none showed any apparent change with toxin treatment. All were either extensions from thigh, true pelvis or spermatic cord or metastases from distant tumors and are, therefore, indicated in parentheses.

Of the skin cases, 4 in number, it is striking that all belong to Class D. Three were melanotic sarcomata previously mentioned, and the other a spindle cell sarcoma arising from a pre-existing benign tumor on the arm.

This analysis according to anatomical situation or tissue of origin suggests that toxins offer practically no expectation of benefit in sarcomata arising from skin or subcutaneous tissue, in sarcomata occurring in the abdomen, and in sarcomata arising from bone, excepting perhaps giant cell sarcoma; but they are apparently of value in sarcomata arising in the nose and accessory sinuses, whether round cell, giant cell, or spindle cell.

APPARENT CURES.

CASE 1. M. L., age two. Throat records, vol. xiv, p. 245. Referred by Dr. Mosher.

Dec. 3, 1910, admitted to House with history of appearance of sore in the nose accompanied by much discharge and passage of pieces of tissue. The nose appears flattened, and one-fourth inch of the anterior end of the septum has disappeared. The exposed septum is much thickened. Tuberculin skin test and Wassermann test negative. December 8, specimen removed for examination.

Pathological Report by Dr. Whitney: fibroma or fibrosarcoma.

FIG. 7.

FIG. 7 illustrates Case 6 of apparent cures. Giant cell sarcoma of spine. Photograph taken April 11, 1914, fifteen months after toxin treatment discontinued. The operation scar is shown. In the center of this is seen a large, broad scar, and at the upper extremity another scar. To the left of these are shown four or five smaller scars. These scars are all soft, not adherent to the structures beneath, and represent healed craters through which the re current tumor, 5½ x 3½ x 2 inches, was sloughed out under toxin treatment. There is no evidence of recurrence.

Jan. 20, 1911. Operation. Dr. Mosher. Ether. Septum and thickened ethmoidal region removed as far as possible and packed with gauze.

Jan. 24, 1911. Treatment with mixed toxins instituted and continued five months. Reactions slight, rarely severe. Maximum dose three and one-half minims.

Patient has since been seen by me with rhinologist every few months. Now two years, eleven months since toxins discontinued, there is no subjective or objective evidence of recurrence.*

Dr. Whitney has kindly re-examined the sections recently and reported, as previously, fibroma or fibrosarcoma.

Criticism. Owing to the pathological report it may be argued that this case should be excluded. It has been included because the process involved not only the septum but extended up into the ethmoid cells.

CASE 2. E. M. McK. A school girl of 12. Throat records, vol. xv, p. 161. Referred by Dr. Mosher.

Feb. 17, 1911, record states: right incisor stands alone pushed out in front of tooth line. Gum on this side very much enlarged and darker in color than surrounding tissue. Both antra dark to transillumination.

Feb. 18, 1911. Operation. Dr. Mosher. Ether. Right upper canine removed and found to be sound. Tumor tissue hard and fibrous, slightly suggestive of osteosarcoma. This was found to extend upwards into antrum. The anterior wall of the antrum together with tumor removed with chisel. Cavity curetted. Considerable hemorrhage. Packed.

Pathological Report. Giant cell sarcoma.

March 1, 1911. Toxin treatment started and continued for six weeks. Maximum dose 2½ minims. Constitutional reactions of moderate character. Local reactions (pain in cavity after injections) severe.

March 4, 1914, two years, eleven months since toxins discontinued, patient found in her new home. Well developed and nourished girl of good color without subjective or objective evidence of recurrence.*

* May 29, 1914. This patient is still well, three years, one month since treatment discontinued.

* May 29, 1914. This patient is still well, three years, one month since treatment discontinued.

Criticism. Owing to the good results obtained by excision and curetting in cases of this type it may be argued that this case should be excluded. It has been included on account of the size and extent of the process.

CASE 3. L. E. F. A woman of 46. House No. 180,998. Referred by Dr. Crosby Greene.

Feb. 12, 1912. Admitted to Ward G with following history. Eight years ago first noticed movable mass inside the nose which was partially removed. Recurred one year later. At second operation (Dr. Greene) under ether a considerable quantity of tumor tissue and ethmoidal bone removed with cutting forceps. Pathological report, spindle cell sarcoma. No evidence of recurrence until last year when began to experience frontal headache and frequent epistaxis, and lately dizziness, nausea, and throbbing in head.

Feb. 12, 1912. Operation. Dr. Greene. Ether. Through an incision at side of nose and beneath eye the antrum opened. Its inner wall and middle turbinate removed. Ethmoidal region found filled with vascular growth which was evacuated with curette. A large portion of the right nasal bone was removed and cribriform plate exposed. Brain pulsation visible.

Pathological Report. No. 122-45. Spindle cell sarcoma. "A piece of growth from ethmoid showing upon microscopical examination bundles of large spindle cells interlacing irregularly. Blood vessels in many places with distinct walls."

Treatment with mixed toxins instituted in one week and continued six weeks. Reactions moderate. Maximum dose 4 minims.

Dec. 2, 1913. A letter from Dr. Greene states that one year after operation (Feb., 1913) no subjective or objective evidence of recurrence.

March 6, 1914 (two years since toxins discontinued). A letter from patient states that her health is very good and there is no indication of old trouble.*

Criticism. An extensive infiltrating spindle cell sarcoma. An extensive operation by Dr. Greene. It may be argued that all of the growth was eradicated at operation. This is possible but at the time it did not seem probable. Perhaps this case should be excluded.

CASE 4. L. A. W. A man of 55. Throat records, vol. xiii, p. 297. Referred by Dr. Barnes.

Oct. 14, 1910. Admitted to Ward G. For three months difficulty in breathing through nose. For two months epistaxis twice a week lasting one to six hours. For two months frontal headache, especially on the right, and nasal discharge.

Oct. 14, 1910. Operation. Dr. Barnes. Cocaine. Two large pieces of tissue snared from nose followed by profuse hemorrhage. Ether necessary to check bleeding by packing.

Pathological Report. Small round cell sarcoma. "A small piece of tissue showing upon microscopical examination a solid growth of round and slightly elongated cells infiltrating the tissue in all directions."

Nov. 28, 1910. Operation. Dr. Barnes, Ether. One and one-fourth inch incision on right side of the nose. Nasal process chiseled away and sarcomatous tissue exposed. Posterior nasal plug inserted. Mass scooped out with finger. Antrum then opened through canine fossa and found filled with growth which was scooped and curetted out. The whole naso-antral wall was found to be destroyed. Antrum and right naris packed with gauze.

Dec. 5, 1910. Toxin treatment started and continued five and one-half months (May 23, 1911). Forty-nine injections. Maximum dose 10 minims. Reactions often severe. During this time the appearance of septum became suspicious and a small piece was removed which showed small round cell sarcoma. Toxins continued two and one-half months longer at which time a note in the throat department states "Nose clean. Everything in fine condition." Patient had gained 25 pounds.

Dec. 12, 1911. (Seven months since toxins discontinued.) My record reads, "looks well, good weight and color. Working as janitor. No symptoms of recurrence. No evidence of same. Seen by Dr. Mosher who finds no evidence of recurrence."

Last seen Dec. 24, 1913 (two years, seven months since toxins discontinued). In excellent health, good weight and color, working steadily as janitor.

Criticism. A small round cell sarcoma of the antrum and ethmoid. Seems quite improbable that curetting eradicated such an infiltrating process, as recurrence showed. Seems fair to attribute apparent cure in part, at least, to toxins.

CASE 5. L. P. Italian woman of 32. House records E. S. vol. 676, p. 221; vol. 702, p. 37; vol. 716, p. 159; vol. 722, p. 57. Referred by Dr. Scudder.

March 2, 1910. Operation. Dr. Scudder. Ether. Resection of right superior maxilla for sarcoma of the antrum. Ethmoid cells curetted out. Frontal sinus not involved. Sphenoidal sinus opened, contained pus, curetted.

Pathological Report by Dr. James Homer Wright. Malignant Lymphoma. "Specimen consists of the greater portion of the right superior maxilla. Tumor mass fills up antrum, involves bony parts of the right side of the nasal cavity, and also appears on the outside of the bone at two points. Tumor consists of whitish translucent, moderately firm, rather homogeneous tissue. Microscopic examination (paraffin section). Tumor chiefly of cells, generally closely packed together, and a relatively small amount of stroma. Masses of cells are like large lymphocyte forms of cells found in lymphadenoid tissue. Some small lymphocytes are present. There are areas of necrosis."

Oct. 20, 1910. Operation. Dr. Scudder. Ether. Partial removal of the septum for recurrent sarcoma.

Pathological Report. (1010-69.) Dr. Whitney. Malignant lymphoma. "A few bits of tissue showing on microscopical examination growth of lymphoid cells, in places slightly elongated and spindle shaped."

May 11, 1911. Moved to operating room. Seen by Dr. Scudder. "Radical operation with enucleation of eye intended but impossible to pass Crile ether tube on account of obstruction. Piece of growth removed with tube, evidently sarcoma. Process had extended to left side of nose and face. Only hope lay in attack of both sides of face. Deemed inadvisable."

* Letter received from patient May 29, 1914, states she is still in excellent health, two years, two months since treatment discontinued.

Pathological Report. (Pieces of tissue removed with Crile tube) (115-42) Dr. Whitney. "Round cell sarcoma. Small pieces of tissue from the nostril showing upon microscopic examination a small round cell tissue with new-formed blood vessels and remains of small glands scattered throughout it."

May 11, 1911. Toxin treatment instituted and continued three weeks. Maximum dose 3 minims. Reactions severe. Patient followed five months outside hospital, then referred to Boston Dispensary for consolidation in right lung. Later treated at Burroughs Place Clinic, at Long Island, and at Middleboro for tuberculosis of lung.

Feb. 28, 1914. Seen at her home. Still thin but of good color, has done her own housework for the past year, and expects to be confined in a few days. Examination through nose and mouth and opening beneath right eye, which exposes whole nasopharangeal cavity, shows no evidence of recurrence.

(March 26, 1914. Seen at home. Normal child born March 5, 1914. Mother still well.)

Criticism. A small round cell sarcoma of the nasopharynx, nose, and left side of face after radical attack of right side. Considered inoperable. No evidence of malignant disease 2 years, 9 months after toxin treatment. Seems fair to attribute apparent cure in part, at least, to toxins.

CASE 6. A. J. M. Boy 16 years of age. House records, orthopedic, vol. xx, p. 67; W. S. vol. 761, p. 161. Referred by Dr. Porter.

June 10, 1912. Admitted to Hospital with following story. Fell three months ago striking spine. Pain and tenderness have persisted in this region ever since and for two weeks numbness over external and anterior surface of right thigh with absolute loss of sensation.

Patient walks with slight instability, complaining of weakness of right knee, steps with great care, the slightest jar causing excruciating pain in lower dorsal region of spine, shooting up to head. Slight depression in region of tenth dorsal spine with swelling about the size of hand in posterior subcostal region. Both legs may be raised over about one-third normal arc beyond which pain in the back and to right side of spine. Ankle clonus and Oppenheim sign on right. Area of analgesia over external aspect of right thigh just below trochanter. X-ray negative.

June 21, 1912. Nerve consultant (Dr. Baldwin) finds double ankle clonus and Oppenheim with disappearance of tactile and pain sense over right anterior crural distribution. Diagnosis, partial paresis of traumatic origin.

June 22, 1912. Swelling of back appeared fluctuant but aspirating needle revealed nothing.

June 26, 1912. Operation. Dr. Porter. Ether. Bluish colored, rather tense, fluctuant mass exposed beneath muscles of back; incised with escape of quantity of dirty liquid which was found to be encapsulated in rather definite sac with thickened broken-down tissue in walls. Vertebrae involved. Curetted out and during operation Dr. Wright reported giant cell sarcoma. Transverse process removed, bone curetted, capsule trimmed as much as possible. Bleeding profuse. Cavity tightly packed. Patient to bed in very poor condition but recuperated rapidly.

Pathological Report. (126-126.) Dr. Hartwell. Giant cell sarcoma. "Specimen consists of soft irregular pieces of tissue. Microscopical examination shows richly cellular tumor composed of spindle cells with numerous giant cells. The cells are very atypical and their richness varies in different areas of the tumor, some places being quite fibrous. There are scattered necrotic areas in the tumor tissue."

Treatment with mixed toxins started at once and continued until Jan. 29, 1913, seven months. Injections every other day and then twice a week. Maximum dose 18 minims. Reactions usually severe. Seen 108 times. Injected 62 times. Early injections into belly, legs, and arms, and later into recurrence which rapidly developed. Recurrence became in length 5½ inches, in breadth 3½ inches, in elevation 2 inches with paresis of right leg. Despite violent reactions treatment persisted in. Tumor began sloughing in several areas and in January, 1913, no evidence of any mass or disturbance of sensation of limbs.

Since that time patient has reported every week or fortnight; has steadily gained in strength and weight; no evidence of recurrence by examination or x-rays.

Last seen March 21, 1914. (One year, two months since toxins discontinued.) Well developed and nourished. Good color. No subjective or objective evidence of recurrence. Scars soft and not adherent to structures beneath. Has worked many months as chauffeur. Recently began work in tool and lathe company.

Criticism. It seems fair to attribute this apparent cure in part, at least, to the toxins.*

I have been much interested in the phenomena resulting from injections. Some injections may cause marked local reaction characterized by pain, heat, redness, swelling and tenderness with practically no constitutional reaction. Other injections in the same individual may cause only slight local reactions, but marked constitutional reactions, characterized by chill, fever, vomiting, pains in head, back or extremities, and disturbance of bowels. In all cases in which growths have been accessible injections have been made into the growths. As has been already stated, in some cases the growths have shown marked changes and have in a few cases permanently disappeared. In some cases (Group D), however, although growths under treatment have disappeared, new growths have simultaneously occurred. The beneficial action of the toxins in such cases appeared to be more local than systemic. In other cases, on the contrary, in which growths were inaccessible (intranasal and accessory sinus cases) injections at a distance (usually into the abdominal wall) have produced

* This patient was shown before the staff at the time this paper was read, and also, through the courtesy of Dr. Porter, before the International Society of Surgery at the Massachusetts General Hospital, April 27, 1914. In June, 1914, a routine x-ray examination discovered a small mass apparently arising from lateral surface of spinous process of third lumbar vertebra. This mass was not evident by inspection or palpation and was producing no symptoms. The boy was apparently in excellent health. At operation Dr. Porter removed a circumscribed bone cyst. The boy has made an excellent recovery. Pathological report: bone cyst, no evidence of malignancy. This was a benign cyst, an inflammatory reaction. It still seems fair to claim that the toxins averted invalidism with paralysis (perhaps lingering death) from the early, rapidly-growing recurrence.

apparent cures. In such cases the action of the toxins must be regarded as systemic.

In one case, a melanotic sarcoma of the back, a bluish-black mass about 1½ inches in diameter was resolved by local injections to an apparently fibrous mass of dull red color about ¾ inch in diameter. During this period another pigmented mass was developing within a few inches of this mass. The second mass attained the size of a pigeon's egg, despite the diminution in size and change in appearance and consistency of the other mass. Both masses were then excised under ether with an elliptical area of skin, subcutaneous tissue and fascia about 6 x 2¾ inches. Fourteen sections were then made of the two masses, the treated and the untreated. Figs. 3 and 4 show characteristic portions of the untreated tumor. Figs. 5 and 6 show characteristic portions of the treated tumor. The magnification in all plates is 375 diameters. The differences in appearance are striking. Fig. 3 shows cells of various sizes and shapes, many of which are pigmented, and very little stroma. Fig. 4 shows another area of the untreated tumor in which the cells are more uniformly large and in which there is a greater amount of stroma. In marked contrast to these are Figs. 5 and 6 of the treated tumor. In both, the picture is of small round cell infiltration with new connective tissue and blood vessel formation. In Fig. 5 these small round, new connective tissue and young endothelial cells predominate. The picture is of inflammation rather than of malignancy. In Fig. 6, although there are many small round, new connective tissue and young endothelial cells, there still persist some large pigmented tumor cells. These plates demonstrate microscopically what is evident clinically: first, that the tumor is destroyed by an inflammatory process; and second, that in this group of cases (Group D), at least, the action of the toxins must be considered as local rather than systemic.

CONCLUSIONS.

1. The treatment of primary or recurrent inoperable sarcoma with mixed toxins must be intensive. The severity of reactions may be lessened by certain measures and I see no contraindication to such humane practice. The increment of dose and the interval between injections requires some experience but, even after a considerable experience, this method of treatment is always uncertain.

2. This method of treatment is so uncertain and so distressing that,

(*a*) Its institution is unjustifiable in any case in which operative measures of reasonable safety offer possible hope of removal.

(*b*) A frank statement of the nature and severity of the reactions and the possibility of benefit should be made to the patient or some responsible person before treatment is instituted.

(*c*) It should be instituted in no case unless proven microscopically to be sarcoma.

(*d*) Its institution is unjustifiable in all cases of inoperable sarcoma.

3. The percentage of apparent cures may be regarded as varying from 9.4 to 18.8.

4. This study suggests that the toxins offer no expectation of benefit in cases with multiple melanotic growths, in cases with mixed cell growths, in cases with intra-abdominal growths, and in cases with growths arising from subcutaneous tissue or bone, excepting perhaps giant cell growths. It suggests that they may be legitimately tried in cases with single melanotic growths. It suggests that they are apparently of value in cases with sarcomata arising in nose and accessory sinuses, whether spindle cell, giant cell, or round cell.

5. The operative treatment of true giant cell tumors gives in the majority of cases such good results that the toxins are not indicated. Their use is, however, warranted in those cases in which the growths are so situated that complete surgical eradication is impossible (such as giant cell tumor of the spine) and in these cases, I believe that the attack should be primarily surgical, followed immediately by toxin treatment.

ON THE DIAGNOSIS OF INCOMPLETE FORMS OF PYLORIC STENOSIS BY MEANS OF THE X-RAY.*

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AND

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THE diagnosis of gastrectasia due to stenosis of the pylorus is not usually difficult, especially when the cardinal symptoms of this disease are present. The vomiting of the collective type, together with peristaltic or antiperistaltic waves, point clearly to the diagnosis; and this becomes even more certain when food remains are observed in the fasting stomach in the morning, and especially when the gastric contents are of the three layered variety, and contain numerous sarcinae; or when the rice test of Hausman or the chlorophyle test of Boas is positive; but we all know that these findings are only present when the obstruction is marked or nearly complete, and that there are a large number of cases, in which obstruction is suspected, and yet many weeks often elapse before the stenosis becomes sufficiently marked to warrant a positive diagnosis. For the symptoms already noted occur only as late manifestations of the disease, and are not present or are only occasionally observed as early signs. At times spastic contractions of the pylorus, due to former ulcers, or the irritation of the gastric contents upon erosions, and fis-

* Presented at the meeting of the American Gastro-Enterological Association at Atlantic City, June 22, 1914.

sures in this region present similar signs. For practical purposes cases of pyloric stenosis may be divided into two classes.

First. Those cases with marked and constant retention of food remains and stagnation.

Second. Those with a moderate amount of retention, often intermittent and frequently associated with a gastro-succorrhea chronica, as has been described by Soupault and Enriquez and Durand.

There is, however, nothing definite in this classification, and the two types are often only stages of the disease in the same individual.

As we have already pointed out, the diagnosis of the first type is extremely simple, and inasmuch as we are able to diagnosticate this variety of stenosis so easily, it is unusual nowadays to observe patients who have reached the extreme stage of this disease, except in those instances in which the stenosis is due to malignant disease.

The diagnosis of the second type, however, is fraught with great difficulty. The condition is due to a partial stenosis of the pylorus, and inasmuch as the symptoms produced by it are extremely vague, the condition is often overlooked, or an incorrect diagnosis is made.

The physical signs of the disease are not marked, peristalsis being usually absent, and vomiting occurring irregularly, the vomitus being devoid of the usual features occurring in gastric stasis. A symptom very frequently present is pain appearing sometime after meals, and becoming most intense two or three hours after the ingestion of food.

This pain is due to the pyloric spasm produced by the incomplete obstruction, and is temporarily relieved by the ingestion of food or of alkalies. As is well known, this symptom is characteristic of ulcerative lesions in the pyloric or juxta-pyloric region, but inasmuch as in many instances partial obstructions have their origin in pyloric and juxta-pyloric ulcerations, this symptom is valuable as an early sign of the disease. As additional evidence of the presence of partial stenosis is the existence of gastric secretion in the fasting stomach, especially if this condition is observed in frequent examinations. If the fasting stomach is constantly empty of gastric secretion partial stenosis may usually be excluded. The diagnosis may be based, therefore, on the presence of secretion in the fasting stomach, occurring continuously or intermittently, together with stasis, though even of small amount, appearing at more or less frequent intervals.

These signs appear, however, so intermittently that they are often overlooked, especially when overshadowed by the usual symptoms of dyspepsia occurring in this affection.

Moreover, we are convinced that in many instances, certain affections associated with slightly delayed motility, such as is observed at times in atony of the stomach, are frequently not due to simple muscular relaxation, but are produced by partial stenosis of the pylorus. The recognition of partial obstruction of the pylorus is not only of importance from a diagnostic point of view, but is equally important when considered therapeutically.

For it not infrequently happens that patients are treated for simple atony, nervous dyspepsia, and chronic gastritis when the actual condition at hand is a partial stenosis of the pylorus, which gradually becomes more and more complete, even without any evident change in the symptomatology, and valuable time is thus frequently lost in delaying proper medical treatment or surgical intervention, which, had the condition been recognized earlier, might have been more radical and consequently more successful.

The x-ray has given us a means of more thoroughly solving this difficult problem.

In the diagnosis of partial obstruction, the greatest difficulty that arises is that the stomach is not a hard and fixed subject; for we know that a perfectly normal stomach presents great variability, not only as to position, but also as to motility, and expulsion of contents. In a general way we may divide the various types of stomach into three classes.

First, the stomach of a very fleshy individual, in whom this organ occupies almost a horizontal position. Second, the stomach in the medium weight person, in whom we have the cow horn shape variety. Third, the stomach in the very thin individual, in whom we have the tubular fish hook variety with the fundus well down in the pelvis. Corresponding to these conditions we may have the motility of the stomach markedly affected; so that we have no hard and fast rule, according to which the stomach can be said to empty in a certain number of hours, and that if this time be prolonged, that the conclusion be reached that we are dealing with some pathological condition.

The best authorities have agreed that the stomach which discharges its bismuth meal in from three to six hours empties itself practically within a normal rate. Consequently with this wide variation it makes it extremely difficult to determine beginning partial obstruction. Of course, in those cases in which we have retention of contents from twelve to twenty hours, there can be no question as to the diagnosis, but there the pathological condition has advanced so far that the question of successful treatment from a medical standpoint is materially lessened. To obtain the best effect partial obstruction must be diagnosticated early.

In our work we have simply aimed to give a preliminary report, indicating the methods which we have followed to arrive at some conclusion concerning this very important subject.

At this point it is wise to mention the character of the bismuth meal that has been employed. Our experience has shown that with the different meals used there is always a slight

difference as to the motility of the gastro-intestinal tract, consequently it has been our procedure for the last four years to employ one bismuth meal, namely one and a half ounces of bismuth subcarbonate, in an ordinary glass of water, and sufficient mucilage of acacia to make an emulsion. This meal has the convenience of being very easily prepared, and does not tend to nauseate the patient, as so frequently happens when some other menstrum is used for the bismuth.

Our experience has been that the results as a whole are much more satisfactory if not too large a meal is given. Some of the meals vary in amount from 16 to 32 ounces, whereas we seldom use over twelve.

In taking up the question of partial obstruction, we must first look at this condition from three points of view.

First, obstruction from within; second, obstruction from without; and third, retention from muscular relaxation.

OBSTRUCTIONS WITHIN THE STOMACH.

In the first condition we are dealing chiefly with either a malignant condition around the pylorus, or ulcer with cicatrix or idiopathic thickening of the pylorus. These conditions produce practically the same effect upon the action of the stomach. In the early stages of this condition we have active contractions with the slow elimination of the stomach contents. Now, as has already been mentioned, a normal stomach empties its bismuth meal in from three to six hours. Generally we observe that the high stomach occupying the horizontal position, empties much more quickly than the prolapsed fish hook variety, so that it might be stated that from three to four hours is the normal rate for emptying of the horizontal stomach, and five to six hours for the prolapsed fish hook variety. When in these various types we note that, while the contractions are good, yet the expulsion of contents is slower than under normal conditions, we may consider the possibility of some beginning obstruction. A second very significant sign is the fact that in the study of the plates we frequently observe that a portion of the stomach just within the pylorus on the greater curvature in the prepyloric region shows a tendency to bulge.

This condition is produced by the active contractions of the stomach, forcing all of the food towards the pyloric region. The pylorus not being patent, the prepyloric portion of the stomach becomes dilated under this constant pressure, so that the plates present the pylorus not at the end of the stomach, as it were, but the prepyloric region extends further to the right than the pylorus, the pylorus resting on the top of the stomach, and pointing to the splenic region. The prepyloric bulging is dependent largely upon the duration of the affection. In early cases it is very small, but as the condition advances, the prepyloric bulging may reach the size of a hen's egg. If the condition persists, dilatation begins to take place, and after a time, practically the entire fundus yields so that typical sack-like formation is produced, and the entire bismuth rests in the bottom of the fundus. In this state the examination will present a retention of contents of from ten to twenty hours.

OBSTRUCTIONS FROM WITHOUT THE STOMACH.

We find this condition due chiefly to two factors. First, from a mass or growth pressing upon the pylorus and duodenum, and thus producing mechanical obstruction, and secondly, adhesions occurring around the pylorus and duodenum and omentum.

The first condition is rather unusual. It can be cleared up by palpation of the abdomen by either moving the mass or changing the position of the stomach, so that under massage the contents will be expelled quite freely. The second, obstruction from adhesions, is in this day of operative surgery quite common, as can be observed in many post operative cases which are explored, or by chance come to the autopsy room. One cannot help but be impressed with the fact how frequently adhesions are formed and are produced by various forms of pathological conditions. At the same time one is frequently amazed to see how nature will accommodate itself to the various malformations produced by such adhesions.

One of the most common causes of partial stomach obstruction is the formation of adhesions following an appendix operation or an unoperated chronic appendix. It frequently happens in these conditions, that by the formation of adhesions involving the cecum and possibly the transverse colon, the omentum will also become involved, and being pulled over to the appendix region, pulls down upon the greater curvature. This tension or pull is frequently so strong as to interfere with the motility of the stomach, so that proper expulsion of contents is impossible owing to the fact that the greater curvature cannot contract properly. With this condition, the stomach may be definitely dilated. The prepyloric region of the stomach will be observed resting in the appendix region and there will be definite retention of contents, varying anywhere from six to eight hours. This condition is so typical that if at the first examination the stomach occupies this position one can almost definitely state that we are dealing with a partial obstruction at or about the pyloric opening. Then, too, we can have quite a similar condition arising from adhesions being formed around the gall bladder. In these cases the duodenum or pylorus may be bound down so tightly as to very materially narrow the portal of exit. In these cases again we have the active contractions slow expulsion and retention

of contents beyond five or six hours. The degree of dilatation depends entirely upon the degree of obstruction.

RETENTION FROM MUSCULAR RELAXATION.

At times one will see a sluggish atonic stomach in which the contractions are so slow that the mere weight of the contents of the stomach will gradually cause a uniform dilatation of the fundus. The position at the point of greatest prolapse is always in the centre of the fundus. The stomach assumes the appearance of a rubber bag in which a great quantity of shot had been placed, thus causing the lowest point of the bag to sag, and become elongated. It is very difficult at times to distinguish between one of these atonic conditions, and one in which an obstruction had been existing for a sufficient length of time, when the stomach is almost worn out, so that there are practically no contractions and the stomach assumes the position of the atonic prolapsed organ. However, the picture of an atonic stomach is so characteristic and differs so markedly from that of partial obstruction that the two conditions can usually be easily differentiated from each other. In conclusion we may state that the x-ray is a very valuable aid in the diagnosis of beginning pyloric obstructions. First, in the cases in which the trouble is from within, as from ulcers and growths; second, it is especially valuable in cases where the obstruction is from without, due to adhesions producing an abnormal position of the stomach, and thus interfering with the motility. This is especially true of adhesions in the lower right quadrant, where so frequently we find the stomach bound and not functioning properly.

In these cases, the primary symptoms may be so marked, for example, those associated with disease of the appendix, that the gastric symptoms may be completely overshadowed, or the very reverse may be observed, that is, the symptoms produced by the abnormal position of the stomach may be so prominent as to entirely overshadow the primary condition. Third, these examinations should always be studied in conjunction with the clinical signs, being but a part of a general examination, developing, as it does, but one side of this very complex subject.

New Instrument.

AN EASILY-MADE AND RELIABLE DIALYSER FOR ABDERHALDEN TEST.

BY HORACE GREELEY, M.D., BROOKLYN, N. Y.

SINCE all the thimbles so far put upon the market require separate testing to determine their reliability and as they are somewhat expensive it is thought the following device will be of service to those making the tests.

Take a small-size test tube and file off the closed end, smooth raw edges and fold over the cut end a piece of lense-paper which should be held in place by a small rubber band twined over it about one-quarter of an inch above the edge of the tube. With a camel's hair brush paint collodion (U. S. P.) over outside of lense-paper, dry, and suspend tube in one of larger size, upon whose lip the lip of the smaller tube should rest. Sterilize in Arnold's sterilizer and apply usual permeability tests. A little practice may be necessary before one learns to properly regulate the thickness of the coat of collodion applied.

Medical Progress.

REVIEW OF PROGRESS IN BIOLOGICAL CHEMISTRY FOR 1913.

BY A. EVERETT AUSTIN, M.D., BOSTON.

SUGAR CONTENT OF THE BLOOD.

THE quantitative determination of the blood sugar has proved of great value in the differentiation of glycosuria due to hyperglycemia from all others. Several methods which require only minute portions of blood have been devised, but one of the most practical because demanding the smallest laboratory equipment, is the following, proposed by Kraus and Adler[1]: 1 c.c. of blood is to be obtained from a finger puncture, and is freed from albumin by dilution with water (10 parts) and the addition of 1 c.c. of dyalized iron, drop by drop, while shaking. The mixture can then be filtered or centrifuged and the distillate or centrifugate be cooked with 10 c.c. of 1-10 strength of Fehling's solution, which equals 5 mgms. sugar. The unreduced copper is then reduced by adding an accurate 0.4% glucose solution (better, 0.1%, ref.) when each c.c. contains 1 mgm. glucose. The difference between the c.c. added and the 5 mgms. required for the reduction of the copper will give the sugar content of the original c.c. of blood.

Tachau,[2] by the determination of blood sugar in many instances, has reached certain conclusions: If hyperglycemia (more than 0.85 part per thousand) is found while the patient is fasting, then true diabetes is present, apart from a few diseases (Basedow) associated with a blood sugar increase. When the fasting sugar is not increased, an increase an hour after the ingestion of 50 grms. of white bread has the same significance. If neither of these conditions is present, a glycosuria may be regarded as of renal origin. The amount of increase measures the severity of the disease. Increase or diminution of blood

sugar gives a better insight as to the effect of treatment than does urinary sugar.

Flesch[3], in an investigation of blood sugar in Basedow's disease did not find spontaneous hyperglycemia, but did find it in 60.7% of cases after the ingestion of 100 grms. glucose. This increases after operation, but soon sinks to normal with the improvement of nervous symptoms. A similar tendency to increase of blood sugar follows the ingestion of thyroid extract by the normal individual. This alimentary hyperglycemia may be used, when present, to substantiate the diagnosis of Basedow's disease when some of the usual symptoms are absent.

Freund and Marchand[4] have demonstrated that the common increase of blood sugar in fever is due to the nature and severity of the infectious agent and not to the accompanying fever and hence is only a symptom of the infection, increasing with the grade of this factor and not with that of the temperature. In hypertension with nephritis, Hagelburg[5] has shown an increase in the amount of blood sugar, which is particularly noticeable in general arteriosclerosis. In six cases of interstitial nephritis, on the contrary, the sugar was not increased. Port[6] also has discovered an increase in the sugar content of the blood in nephritis when accompanied by uremic attacks, apoplexy or eclampsia, and there is an associated increase of blood pressure; therefore the two symptoms of hypertension and hyperglycemia are not to be attributed to a common cause, exaggerated secretion of adrenalin.

INDOL AND INDICAN.

In a careful investigation of patients suffering from gastro-intestinal symptoms, Frankel and Franko[7] have found that when blood is poured into the digestive tract, even in the minutest quantities, indican is markedly increased in the urine; this is particularly true of blood from a gastric ulcer. As the ingestion of meat, and particularly of fibrin, may produce the same increase in indican, similar precautions must be observed, as in the search for occult blood in the feces, *i.e.* freedom from the ingestion of meat. The dependence of the amount of indol and indican formed on the character of the food has been studied by von Morazewski and Herzfeld[8], who found both increased upon a fat, vegetable and gelatine diet in healthy individuals, but a marked diminution occurs upon a starch or sugar diet. When on a starch and sugar diet a change to protein caused an increase and while on a fat diet a change to protein caused a diminution in both substances. A close connection exists between the fecal indol and the urinary indican in that they both increase and diminish conjointly. When an idicanuria exists two factors must be considered as its cause, first the absorptive power of the intestine, and secondly the power to destroy indol before its pairing on the part of the organism. The former tedious method of isolating indol from feces by distillation, extraction with ether, and its quantitative determination by weighing has been much simplified by Herzfeld and Bauer[9], who proceed as follows: 10 grams of feces are suspended in 1000 c.c. of water and 5-600 c.c. of this distilled off, the distillate shaken out with xylol, the latter allowed to evaporate, a definite amount of water added to the residue dependent on the amount of the control used, and Ehrlich's reagent (dimethylaminobenzaldehyde, 2.0, and acid hydrochloric conc., 100.0) added, until the most intense color is produced, when it is compared with a standard indol solution of known strength, to which some of the reagent has also been added. A colorimeter may be employed but is not necessary. Quantities as small as 1:10,000,000 can be estimated in this way.

FORMATION AND ELIMINATION OF OXALIC ACID.

From a special study of the subject Weyrzynowski[10] comes to the conclusion that the proteins play no part in the formation of oxalic acid, but carbohydrates and fats (particularly glycerine) do. Furthermore, all our food contains certain substances which either directly through metabolism or indirectly aid the formation of this acid. The organism seems to possess only a limited ability to form such an acid as oxalic.

From the results of the investigations of Lichtwitz and Thoerner[11] we learn that in practically all cases of icterus there is an increase of oxalic acid in the urine, but when the obstruction of the choledochus is removed by nature or by operation, the urinary oxalic speedily diminishes. From these results and from those of other observers, it is evident that oxalic acid is positively eliminated to a certain extent in the bile. Two to five grams of glycocoll, when ingested, cause no increase of the urinary oxalic either in a healthy individual or in an icteric. Gelatine is a source of this acid.

AMINO-ACIDS.

These acids still seem to arouse the greatest interest among investigators. Abderhalden and Lampé[12] have observed that when meat is fed to dogs, the amino-acids may be found now and then in the blood, a circumstance equally observable when Wittes peptone and erepsin, together, are fed or introduced into the duodenum. It is also found that certain of these acids pass directly from the digestive tract into the blood current. There is so far no proof that when gelatine and ammonia salts are given, a synthesis of ammonia and carbohydrates or fatty acids takes place.

Galambos and Tausz[13] have investigated the disturbance of protein metabolism in diabetes mellitus, as well as the behavior of urinary amino-acids in both normal and pathological conditions. It was found that both the relative and absolute amount of urinary amino-acids was in-

creased in this disease. There is also a relative hyperaminosuria, dependent on food, found in true diabetes. The authors attribute this increase to a diseased pancreas.

The old analyses of the rectal wash water after nutritive enemata of milk and egg, by which absorption was proven have been shown by Bywaters and Rendle Short[14] to be fallacious. The daily nitrogen determinations of the urine of patients who were nourished solely by milk, peptonized for 30 minutes, or eggs, have shown that not an atom was absorbed. Amino-acids in solution or milk which had been peptonized 24 hours by which the former were formed, when given by rectal injection, have shown by the increase in urinary nitrogen that a fairly large portion of the nutrient enema is absorbed. The lack of increase in the ammonia nitrogen indicates that the increased nitrogen output is not due to the absorption of putrefactive products. Furthermore, the rectal wash water never possessed a putrid odor. The best results were obtained from milk subjected 24 hours to the action of pancreatin, to which 5% of dextrose was added.

Damask[15] has studied the elimination of amino-acids in individuals whose reserve store was exhausted and to whom 20 grams of glycocoll were given while still fasting. It was found that those with normal hepatic functions were unable to dispose of this quantity and some appeared in the urine. One with a diseased liver was usually able to take care of this quantity almost as well as a normal individual, if water was taken freely at the same time. The maximum of the amino-acid elimination by the kidneys occurs at the latest in the second hour with a normal liver or mild hepatic diseases (congestion, cholecystitis and icterus, cholangitis, etc.), but not earlier than the third hour in severer hepatic diseases (cirrhosis, amyloid and syphilitic hepatitis—gumma).

BASIC PURIN BODIES.

Apparently of equal interest with the former is the purin metabolism with its many peculiarities. This has been further elucidated by Hefter[16], who examined the purin bases elimination in healthy as well as diseased individuals. In the urine of normal persons on a nuclein free diet, the purin bases formed 6-11% of the total purin excretion. On the addition of food containing nuclein, the purin bases diminished. On the contrary, the intravenous injection of uric acid produced no effect. When gouty patients are placed on a purin-free diet, the relative amount of the purin bases remains the same as in the healthy, though occasionally it may be increased. When food containing nuclein is added to the diet of the gouty, the change in the percentage of purin bases is the same as in the healthy, but it does not take place so quickly. No change is made by the injection of uric acid.

PENTOSURIA.

Klercker[17] has had an opportunity to observe two cases of this abnormality in metabolism and thinks he has found some association of the pentose with food, in that, while fasting and undernourished, the patient eliminates much less of the 5 atom sugar. A relation with the amount of protein can be detected by the hourly determination of the sugar and the nitrogen of the urine which increase and diminish together, making it rather probable that the former is the source of the sugar. Several facts point to an association between pentosuria and true diabetes, such as the coincidence of pentose and glucose in the urine, the alternation of pentosuria and glycosuria in members of a family, and the fact that rarely the true diabetic eliminates pentose instead of glucose for short periods.

UROBILINOGEN AND UROBILIN.

Hildebrandt[18] calls attention to the fact that the general impression prevails that all urobilin exists in fresh urine as the mother substance, urobilinogen, and is only converted by contact with the air, but he has been able to show that this change may take place in the bladder, and a test like that of Ehrlich, which can be applied only to the former substance, may lead to error even in fresh urine. Hence he prefers a reagent containing zinc acetate, 10.0, and alcohol absolute, 100.0, to be well shaken every time before using. Equal parts of this reagent and urine are to be mixed and allowed to stand in contact with light and air or in the sunlight, if possible. The degree of fluorescence indicates the amount of both pigments combined. Before one can content himself with the Ehrlich test, the urine and the reagent should be warmed together and then examined with the spectroscope and the amount based upon the intensity of the lines found there.

ABSORPTION OF FAT.

The ability of the organism to absorb fat has so far been measured largely by the amount of fat found in the feces or the residuum after absorption had taken place. Neumann[19], on the contrary, has adapted to this purpose our ability to detect fat in the blood after a meal containing a large percentage of this food constituent with the dark field of a microscope. The details of the method are to give the patient the evening before a meal containing no fat, when the next morning no fat is found in the blood. The individual is then given a large amount of fat with a roll and tea, and at hourly intervals a drop of blood is taken and examined in the dark field. Normally, after an hour, numerous bright fat globules can be seen, which rapidly reach a maximum, to recede as rapidly. The abundance of paucity can be determined by the

eye after a little experience. This lack or diminution of fat may be due, of course, to faulty motility, digestion or absorption. The radiograph gives us information as to the first, while the presence of icterus or the existence in the stool of starch or meat fibers will place the stigma on the pancreatic secretion. With the ability to rule out these two factors we may say positively under such conditions that absorption of fat is impaired. This, the author found, might occur with catarrh of the small intestine accompanied by much fecal mucus or with functional intestinal disturbances unaccompanied by mucus.

Aschenheim[20] has studied the effect of fat and calcium-free food on infants and found that the stools are seldom solid. Even when butter is given to the extent of 30 grams daily, it does not change the character of the stool. When fat-free food is given there is still a small amount of fat in the stool, but not enough to interfere with the estimation of fat utilization in the study of metabolism. This fat must be eliminated by the epithelial cells of the intestine. The quantitative estimation of the fecal fat when no fat is given in the food shows that a considerable per cent. of the dried feces may be made up of this exuded intestinal fat. The calcium metabolism is very closely associated with that of fat.

Among the many chemical methods for the early detection of cancer two methods, though unfortunately not absolute, are still being employed, and Wolpe[21] has recently published his investigations based upon seven perfectly normal persons, fourteen suffering from cancer in various parts of the body, and sixteen patients with different non-malignant diseases (thirty-seven in all) on whom he used the Salkowski determination of the colloid nitrogen in the urine with the following results: (1) The positive outcome of this test is not always distinctive of carcinoma, but points to it strongly, since when a malignant growth is present this peculiar breaking down of the nitrogenous structures of the organism is found, even before any clinical symptoms may be present. (2) It may occur that when the diagnosis of cancer is positive the colloid nitrogen may not be increased and conversely there may be an increase in normal individuals, but it is rare. (3) There may be an increase in this form of nitrogen in other diseases, but never to such an extent as in malignant growths, so that this deviation from the normal may be considered as pathognomonic of carcinoma. (4) This test of Salkowski's is easily carried out in a clinic and hence should never be neglected when a diagnosis is doubtful.

The so-called glycyltryptophan test for early diagnosis of gastric cancer has been subjected to a revision by Giana[22], who found that in sixteen cases of true gastric cancer, the test was positive in ten instances, failed in three, and in the other was sometimes present and at others absent. In eleven other forms of disease where gastric cancer could be positively excluded, the test was positive in three and negative in the remainder. Hence he concluded that the ferment may be present at times when cancer is present, though not of the stomach, with an entirely different group of symptoms. Furthermore, when gastric cancer is absent, we may ascribe the splitting of the glycyltryptophan to *pancreatic juice* or blood; nor must we lose sight of the fact that saliva also can split this amino-acid. In the sixteen carcinomatous cases the test was positive with the saliva of twelve and negative with that of four, while in three non-malignant diseases both the saliva and the gastric contents gave a positive result. Therefore he concludes that the test can never be interpreted absolutely until we improve the technic or eliminate the sources of error.

HYDROCHLORIC ACID OF THE STOMACH.

To avoid the use of the tube Friedrichs[23] has employed a thread impregnated with congo red and attached to a capsule which is to be swallowed by the patient twenty minutes after the test breakfast is taken. It is now withdrawn after thirty minutes and, if hydrochloric acid is present, the red is turned to blue, and the greater the preponderance of the latter color, the greater the amount of the acid.

After the method of Holmgren for the quantitative determination of hydrochloric acid, based upon the fact that a drop placed upon a piece of congo paper blues less area and moistens more without change of color, the more concentrated the acid solution is, had been almost forgotten, Schmidt[24] subjected it to an accurate supervision and concluded that while it offers results which differ somewhat from the old method, as one would expect upon comparison of a method based on capillarity with one based on alkali combining power, yet Holmgren's method is not without its merits and should be more generally employed.

According to Aebardt[25] the *normal* gastric mucous membrane secretes a normal amount of hydrochloric acid with, perhaps, a tendency to hypersecretion. When nephritics develop gastritis, between which there is no causal relation unless cardiac incompetency accompanies, the gastric acid is scanty. With acute Bright's a frequent hyperchlohydria is noticed. When at the height of a nephritic process hypo- or achlohydria arises, it is due to the combination of the hydrochloric acid with the volatile chlorides, and this tendency to such a union disappears as one recovers from the renal process.

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Reports of Societies.

CONNECTICUT STATE MEDICAL SOCIETY

ONE HUNDRED AND TWENTY-SECOND ANNUAL MEETING OF THE CONNECTICUT STATE MEDICAL SOCIETY HELD AT NEW HAVEN, MAY 20 AND 21, 1914.

DEMONSTRATION OF SKIN DISEASES.

DR. R. A. MCDONNELL, New Haven: This little girl has had a lupus vulgaris, which began some six years ago. The only satisfactory treatment for this disease is to destroy the bacilli. You try to cut the thing out, and use the x-ray on the scars; but it recurs again, in one place and another. We had a patient, a while ago, who died as the result of carcinomatous growth around the scar from that treatment.

Here is a case that no one would think of being tubercular. It is an old case of fibroid eczema of the palms and soles. That is something like a form of syphilis.

NEWER METHODS OF DIAGNOSIS AND TREATMENT OF GLAUCOMA.

DR. ARTHUR N. ALLING, New Haven: Glaucoma will always be the subject of perennial discussion. There is more written about it than about any other disease in ophthalmology. It is a condition of high intra-ocular tension, and the term "glaucoma" is practically synonymous with high intra-ocular pressure; although not absolutely so, because it is possible for a man to have glaucoma and yet, at times, not show tension—as in the case of glaucoma simplex.

In regard to the diagnosis of intra-ocular tension, we had formerly only one method. We measured the hardness of the eyeball with the finger. All of the instruments devised with the idea of testing the pressure scientifically have proved rather unsatisfactory. However, there is an instrument that we now possess for testing scientifically and accurately the intra-ocular pressure. Glaucoma results from interference with the drainage apparatus. The intra-ocular pressure normally is between 20 and 30 mm. of mercury. If it rises above that, we have, generally speaking, a glaucomatous state or condition. The treatment of it is another story. When this disease once attacks an eye, it is never recovered from. You may live your life through; but, nevertheless, the eye is never right. Our methods of attacking this disease have been, first, palliative, by means of pilocarpin and eserin, which will sometimes do fairly well; and secondly, making an iridectomy. Later, there have been other operations devised; for instance the LaGrange. Col. Eliot, of India uses a trephine for making a hole in the sclera and securing a permanent opening. He was the first to make the procedure useful in cases of glaucoma.

On this patient's eye, I performed an iridectomy, which is the sheet-anchor treatment for glaucoma. We should have what we call a little bleb over the seat of the operation, showing that filtration is going on satisfactorily; but in this case, there is no bleb. The tension, however, is down; which proves that it is possible to get relief of tension without the edematous swelling over the site of the wound.

Of course we are all enthusiastic over the Eliot operation; but, with my natural conservatism, I must say that perhaps the last word has not yet been said about the treatment of glaucoma. Bear in mind that with the procedure, the glaucoma is not cured. You still have the diseased condition that you had in the first place; although artificially you are getting a certain amount of drainage, and the disease may be arrested. Therefore, let us hope that something else may soon be offered by which a cure may be effected.

DIAGNOSTIC METHODS IN GASTRO-INTESTINAL DISEASES.

DR. L. M. GOMPERTZ, New Haven: The first case is that of a patient who, in August, 1909, complained of symptoms that led to a diagnosis of gastric ulcer. He was treated for a short time and felt so much better that he failed to return for further treatment. On May 11, of this year, he came back with an aggravation of the symptoms previously noted, and with loss of weight. A test supper was given him, and an examination of the contents of his stomach made. The test supper contained rice, meat, raisins and anything else he desired. In the morning, a tube was passed into the fasting stomach. Many physicians are unable to get a fasting stomach's contents. It is very simple. Suppose the patient has a dilated stomach, then he leans forward, you compress the tube, and anything that may be in this tube comes out. No matter how little you get, it is enough for a microscopic examination. We got

a little of the contents of the stomach of this man which showed the presence of sarcinae and food remnants. Hydrochloric acid must be present, in order to favor the growth of sarcinae. A diagnosis of cicatricial ulcer was made. Two pictures were taken; one shows the tube going down to the pylorus and then stopping. There is an abrupt ending of the bismuth meal at the pylorus, due to the cicatrix of an ulcer; so we know it is not a malignant growth.

The next patient has been seen at odd times since 1908, and when any excitement occurs, she has a spell of vomiting, and cannot eat anything. Everything comes up almost immediately after it is swallowed. A lot of mucus and food is vomited. In attempting to pass a bougie into her stomach, we encountered an obstruction just above the cardia, 42 cm. from the mouth. The treatment then was passing bougies, and giving tincture of belladonna and bromides. She recovered. Two years later she had another attack and immediately after it she had spasm. She has had these spells so often, coming on when there was any excitement, that there is dilatation of the esophagus above the cardia. It is well to note this fact because in the next case, which is one of malignant obstruction, the obstruction, which is right at the cardia, has only been going on for a short time, so that there is no dilatation above.

The next case shows very nicely the transition of a non-malignant growth into a malignant growth. The patient came to me June 20, 1907, with symptoms of ulcer on the cardiac end of the stomach. He had increased acidity. I treated him and he improved and gained weight. I did not see him for a long time after that. He came back in 1908 with a different history. His appetite was good, but he could not get food down. His bowels were constipated. I passed a bougie and met obstruction right at the cardia. At times, this obstruction lets up a little, so that food can go down through it. It is positively a malignant case, and he still has the obstruction. Of course this case will go from bad to worse, and without any possibility of help at all.

Another case that I want to relate to you is that of a young woman whom I saw eight years ago for the first time. The clinical history, chemical examination, etc., showed the case to be pure ulcer. She was treated for a month and I told her she needed an operation. After that I did not see her until a year ago, when she returned and said that she was ready for an operation. In passing the stomach tube I found hydrochloric acid, sarcinae and food remnants from the night before. I made a diagnosis of cancer of the pylorus, which was wrong. The reason for the mistake was that in passing the stomach tube I got to the obstruction in the center of the stomach instead of to the pylorus. Just before the operation I had an x-ray taken, not suspecting the presence of an hour-glass stomach. Dr. Verdi operated, and made an end-to-end anastomosis; and at the end of two months after the operation, this picture showed the stomach to be smaller, but normal in position. I have seen the girl within two weeks, and she is well and eating three square meals a day, and getting fat.

This case was of a woman who had stomach symptoms and it was perfectly evident that she had a gastroptosis. In passing the tube I got into a pocket, and thought that she had an hour-glass stomach. The next time I passed the bougie, I got into the stomach. I told her she should be operated on. At the operation, instead of an hour-glass stomach, multiple ulcers were found. The ulcers were taken out and stomach was brought in proper position by end-to-end anastomosis. With the aid of the x-ray, the microscope and chemical examinations, we can often arrive at a positive diagnosis; but, on the other hand, this is sometimes impossible. We should try all the different methods of testing, in order to try to arrive at the correct diagnosis.

PRESENTATION OF CASES OF BONE-GRAFTING FOR VARIOUS CONDITIONS, IN DIFFERENT LOCALITIES.

Dr. E. H. Arnold, New Haven: I have done bone-grafting in almost every situation in the body. I have grafted in club-foot, and have done two operations in the tubercular tarsus by inserting pieces of bone. I have grafted once on the tibia for an osteomyelitic defect. The next situation in which I have grafted is in the knee. This boy had a tubercular knee for three or four years. He first had it treated by scraping on the outside, brace treatment, and with plaster of Paris; but they did no good. The process of destruction went on. I did a resection of the knee, cut away as much as I could. The result was that he had some motion in the knee. He went back to his trade three months after the excision. As one of the sinuses still persisted I put in a bone-graft at the front of the knee, in order to do away with the movement. I have succeeded in this, but have not stopped the discharging, so far.

In treating hip-joint disease, we find, in spite of all that we can do, that we get great destruction of the head of the humerus and of the acetabulum. A tubercular knee does not make bone, and the best that we can hope for is fibrous union. No brace will secure absolute immobility, and you cannot keep a child in plaster always.

In this case, I opened the hip and inserted two grafts. One of these sloughed out, but the other remained in. It stimulated bone-making there to such an extent that I got firm bony union. The child now walks without a brace, and I do not think the union will ever break loose.

The next group in which I grafted are cases of sacroiliac and sacrolumbar disease. They are most difficult to treat. They usually go from bad to worse, and are cases that are in the hands of doctors for years.

When first I saw this man he was moribund. I put him on a plaster of Paris bed, and at the end of four months he tried to walk without a supporting brace; but he went to the bad again. I then operated, inserting a graft shaped like an inverted Y. He has a graft in the lower lumbar and upper sacral region. That did away with these joints, and I have secured immobility. In the third week after the first operation he was operated upon on the other side. We did two herniotomies; and within six weeks, he walked out of the hospital and went back to work after three months.

A bone-grafting can be done by anyone. You just take a piece of shin bone and put it in, and the patients all get well. I have grafted into the cervical region twice, and into the elbow for ununited fractures. I have also grafted into the shoulder, inserting the graft right in the glenoid cavity, and it has held, so far.

WASSERMANN'S TEST FOR SYPHILIS.

Dr. C. J. Bartlett, New Haven: The underlying principles of the complement fixation test is

what I will discuss, and I will try to tell you why we get, and why we do not get hemolysis. By this we mean the setting free of the pigment from the red corpuscles. When we speak of complement, we always mean fresh guinea-pig's serum. If we have hemolysis, we have ambocepter which is stable and complement, which is unstable. The test for syphilis depends on complement fixation or complement deviation. In testing for syphilis, we take some syphilitic antigen. Antigen is a substance that, when injected into an animal body, gives rise to an antibody. Theoretically, the organism producing syphilis is the antigen. It has been shown, however, that an extract of normal tissues will act as a syphilitic antigen in the same way as the red corpuscles act as an antigen. If the serum to be tested is from a case of syphilis, it will contain syphilitic antibodies. If the serum to be tested is not from a syphilitic there would be nothing to unite the antigen for syphilis to the complement and it would remain free. Then, when we put in the amboceptor for the sheep corpuscles, union would be brought about between the complement and the sheep corpuscles, which would give rise to hemolysis. The fluid would become clear, which would mean that the test is negative for syphilis. In making these tests we get our serum in quantities of 5 or 10 cc. We let the serum separate over night, and then heat it to 132° F. for half an hour. If we do not get a positive reaction, we know that the case was not syphilis. The simple negative test is not of much value. We have found that the blood serum will give a negative reaction sometimes when the spinal fluid will give a positive one. We also find that the reaction in the spinal fluid lasts longer than in the blood; so that we must examine the spinal fluid before we can discharge the patients as cured. We have found that almost always the blood becomes negative while the spinal fluid still remains positive.

EXPERIMENTS IN NUTRITION.

DR. T. H. OSBORNE AND DR. L. B. MENDEL, New Haven: The charts represent twenty-day periods and weighings. The length of life in the rat is not more than one thousand days on the milk food. The rat will grow for a time on starch and then decline, after forty or sixty days. The foods we use are water-free, and are mixed with lard. The rats grew on this food when it was mixed with protein, and failed to grow when it was not. We have here a chart showing the normal growth on a single protein, such as destin, casein, the albumin of the white of egg, glutein from meat, etc. On certain foods there was practically no growth. All that was necessary in order to have growth start again, was to change the diet from an imperfect to a perfect protein. Some proteins are enough for maintenance, but not for growth. When the animals declined, all that was necessary to make them come up was to substitute butter, butter fat or cod liver oil for a little of the lard. Instantly, almost like magic, there was perfect recovery and continuation of growth. The same is true of egg fat. Solid fats sometime failed to nourish the animal, but they quickly recovered when that fraction of the total butter was substituted by the butter oil. Most of the proteins that we have at our disposal to prepare these foods contain all the amino-acids, and are complete proteins. Others lack one or more amindo-acids, and are incomplete proteins. Using these enables us to determine whether the protein that is lacking is of importance for growth and maintenance. The trytophane group is essential for maintenance, for without it the animal dies in a comparatively short time. The lysin group is essential for growth, but not for maintenance. This brings up another question. How long can an animal be stunted and still recover the power to grow? They go down hill on zein alone, are maintained on zein with tryptophane, and have growth by the addition of lysin. Another question is, Can we supplement the deficiency of the protein by adding another protein to it? and how well can that be done?

If you double the proportion of casein, up goes the growth. One-fourth of destin is insufficient for growth; but with one-half, you come near it; and with three-fourths, you have it. The different proteins have very unequal value. Milk protein contains lysin and corn protein does not. When we add lysin it makes it all right. We added to a diet of nine per cent. casein, on which the rat was growing slowly, the cystin; and it improved the growth. Here is an illustration of a rather unique experiment—an animal that was kept for one hundred and sixty-eight days on a food that did not contain lysin, and so was inadequate for growth; yet it was able to give birth to young, and to maintain and nourish them; but it did not recover its original weight. The animal was an adult. It produced its young, and produced milk for them; but the embryo of the young was produced at the expense of the mother's life.

When we talk of anorexia as being due to sameness of food, we are probably in error. It is due, rather, to individual social conditions. You can eat the same thing, day after day, if you have the right diet. As soon as you have a defective food, however, anorexia is reproduced. When we give them a defective food, the rats stop eating. The malnutrition, then, is the cause of the anorexia, and not *vice versa*.

We were asked why we used rats for these experiments. Well, we cannot, of course, use men. We cannot use cattle, because none of us would live long enough to see his experiments through. In the rats, however, two hundred and fifty days covers the period of growth; two hundred and fifty days more is the period of middle age; and a nearly similar number of days includes the period of old age. The rats, also have comparatively the same rate of growth as human beings; and the cost of feeding them is within the capacity of a scientific institution.

TRANSPLANTATION AND EXPLANATION OF TISSUES AND ORGANS.

DR. ROSS G. HARRISON, New Haven: At the stage when these experiments are made, the embryos have no nervous system; and the number of successful operations is nearly one hundred per cent. There is nothing like a muscular contraction, so that it is not necessary to give an anesthetic for the purpose of overcoming any tendency to sudden movement. It is also safe to assume, as they have no nervous system, that they do not suffer any great amount of pain.

They are operated on under a binocular microscope, and the parts are brought together and held in position by means of wires. They have lived for weeks after the operation, and have grown remarkably. It is quite possible to unite organs of differ-

ent species together. Very often a union between parts of different species is very useful for experimental purposes, because the fact that the cells of the two species are of different color enable one to follow the development of the movements of the cells.

My early work in this direction was done by uniting relatively large pieces; but more refined methods have since been devised, whereby it is possible to use very much smaller parts. If older embryos are used and it is necessary to give an anesthetic, about two parts of chloretone added to ten thousand parts of water will stop movement. The animal can be kept in this for a week, and will undergo its whole development almost normally in this solution.

It was a great surprise to me to find that if the little disc of tissue that represents a limb be turned around through 180° in transplanting, we still have a perfectly normal limb, developing in a perfectly normal position. Therefore, the position must be determined by some factor in the body of the embryo as a whole. Likewise, in a great majority of cases, the interchange of right and left has no effect.

So far, I have been speaking of transplantation only. I shall now take up the question of explantation, whereby the parts are transplanted to some medium outside of the body. We know that the parts of animals may live for some time after the death of the organism as a whole. It is not strange, then, that muscles and nerves should survive outside the organism with which they have been connected, and undergo development as well. Muscle tissue that is entirely undifferentiated when taken out of the embryo will differentiate without the presence of any other tissue whatever. Other tissues will also develop normally. The development of whole embryos has been shown by this method. Even the mammalian embryo will undergo at least a portion of its development. A method has been devised whereby it is possible to obtain large quantities of plasms with which to carry on experiments concerning these processes of growth. Tissues have been grown, not only in this plasma medium, but also in a saline medium. The latter is not so good as the former, but adding sugar or other nutritive material improves it.

As a usual thing, tissues cultivated outside the body retain their specific function, although the gross morphology may not be retained. The degree and kind of solid support has considerable effect on the movement of the cells.

OPERATIONS.

DR. O. G. RAMSAY, New Haven: This is a young woman of twenty-one years, whom I saw first about six weeks ago. I could not get the child's head to engage. The pelvic measurements are very small. Last night she went into labor. We were able to carry her along until now, but the head it still freely movable above the brim. This is one of the selective cases for the operation of Cesarean section. She could be delivered by other methods; the head could be crushed, and the fetus possibly brought through; but we have had better results with the Cesarean, however. When she went into labor the cervix became dilated enough to prevent our having to bother with drainage. I have tried an experiment with this patient. Many of these cases bleed badly and the uterus does not contract very soon. We gave her a good dose of ergot before she took ether, to see what that would do for the contractions. We generally use the high incision, taking the umbilicus as the median point; as there is less chance for adhesions to form and of injuring the bladder. You can get at the baby just as well as though the incision were lower. You get better results if you are more careful in making the incision. We had one case of infection among these Cesarean sections, from letting the uterus lie against the bladder wall. We sew up the mucous membrane. By keeping it together you seem to get a little better result than by just putting in the heavy sutures. We had the opportunity of seeing one of these cases after two or three years. She came in with an active ovarian tumor, and it was remarkable to see how perfectly the wound in the uterus had healed. It seems as if some day this operation is going to be much more frequently done than now. It is a much easier method of delivering than other procedures. I had one case in which I went too far down. The patient had a hematoma; and it interfered with the convalescence, although she eventually got well. In this operation I will bring the peritoneum over the last suture and get it in apposition, so that it may heal more readily.

DR. J. M. FLINT, New Haven: This patient, a woman, aged thirty-eight years, has a perfectly typical clinical picture of subacute hyperthyroidism in exophthalmic goitre. The onset commenced last fall, without any factor with which she can make association. She began to get nervous, and her eyes commenced to be a trifle prominent; and this swelling appeared. The physical examination showed few ocular symptoms. There was no mononucleosis, which is usually associated with the more serious cases. We are using a general anesthetic, instead of attempting to remove the growth under cocaine anesthesia. We use pharyngeal anesthesia in head and neck cases, and in those in which the patient is inverted and the anesthetist has to work at a disadvantage. Its chief advantage is to avoid the anesthetists getting in the surgeon's way, The former can sit some distance away when this apparatus is used. This patient has a relatively small goitre; the right lobe is chiefly involved. It is soft, and has no palpable thrill; but there is a very distinct bruit heard on both sides. We use the simple operation in the toxic cases; that is, ligation of one or both sides of the superior thyroids. There is no evidence here of the thymus persistence, which is one of the interesting chapters in the recent discussion of exopthalmic goitre.

THE LUETIN REACTIONS.

(Dispensary Cases.)

DR. J. B. SULLIVAN, New Haven: This is a pustular type of syphilis. The woman was injected eight days ago. Two years ago she had an initial lesion of the breast, from nursing a neighbor's child. Six months ago the Wassermann was positive. She has had four injections of salvarsan and mercury, and the Wassermann was four times negative thereafter. Later it has been found that the luetin reaction is still strongly positive, which means that she still has uncured syphilis. This patient, a man, has a specific prostatitis. His Wassermann is also positive. Here is another case in which the patient, a man, had a lesion of the soft palate, that most of us thought to be malignant, but we noticed that he had a perforated septum. The Wassermann was triply positive. Salvarsan and mercury were given, and

he showed a papular, and almost pustular reaction. It has left a scaly lesion. This baby came to the children's clinic for ulcers around the rectum and bad teeth. The x-ray showed osteitis and periostitis. We could not find spirochetes from the lesions, but the mother's Wassermann was triply positive. The luetin, however, was entirely negative. There was absolutely no reaction. The baby's luetin, however. was positive. It just means that at some stage of the disease all tests are not positive. You have to use every test possible, so as to make a sure diagnosis.

FRACTURES OF THE CLAVICLE.

DR. W. E. HARTSHORN, New Haven: We had quite a problem presented to us in the treatment of fractures of the clavicle at the dispensary. We found that with the ordinary plaster dressings, it was impossible to reduce the deformity. We did employ the ordinary Sayre dressing. At the end of the second week, in the treatment of these cases, or of the third in adults, the arm was restricted, and the forearm placed in a sling. Sayre's dressing is not very satisfactory, because it is extremely uncomfortable for the patient, and with enough strain put on the adhesive bands to really get reduction, the dressing is so tight that the patient cannot wear it. We next attempted to get adjustment by means of the Collins' method; but the same problem was offered as before, and the method did not stand up well. We then adopted the Bellamy dressing. It is better than the others, but was also very uncomfortable to wear. Last, we tried the Peckham dressing, and it works very well indeed in children. It reduces the deformity, is very comfortable to wear, and can be put on over the clothing. We find it very satisfactory.

APPARATUS FOR SUCTION AND ASPIRATION IN THE TREATMENT OF EMPYEMA.

DR. J. M. FLINT, New Haven: We have had a series of forty cases of empyemata of various kinds and types—the pneumonic, the hematogenous, and one or two interesting cases in which the empyematous process was secondary to abdominal infection. I mention this particularly, because of the recent discovery of a group of lymphatics passing through the diaphragm, and ramifying with the plexus on the surface of the pleura—which gives a definite anatomical route for infections occurring secondary to abdominal conditions, of which phrenic abscess is the most common. He have a method of treatment that we have found eminently satisfactory. There have been a great many apparatuses of various sorts devised to exert a negative pressure on the empyematous cavity. Five or six years ago we devised this empyema tube, which has given most excellent results. It is like an ordinary empyema tube, but has a large rubber dam. We operate on all cases under novocaine. The stitches are left untied, and the apparatus is inserted up to the hilt. The rubber dam is pulled back afterwards, and the wound is closed with silk-worm gut. The chest wall near the tracheotomy is smeared with ointment, and the rubber dam is folded against the chest and covered with gauze. Near the center, overlapping strips of adhesive are placed. The result is absolutely air-tight. Absolutely air-tight openings can be made in the chest wall, by which the normal tension can be replaced. The use of the Politzer bag is impossible in cases where empyema is associated with bronchial fistula, because the leak through the bronchus causes the bag to collapse. We devised a water vacuum to obviate this difficulty. Thus we are able to suck through the empyema tube enough air to overcome the ordinary leak and still keep a partial vacuum in the empyema cavity. Here is a patient with an empyema of eight months' standing and nearly complete collapse of the lung. The sinus had narrowed down until there was inadequate drainage. We enlarged the opening and put in a Politzer bag, which he carried for three months, the progress of the case being checked by the x-ray. The lung was gradually re-expanded and the patient cured. The apparatus can be carried around by the patient while attending to business, as it does not interfere with ordinary life at all.

APPARATUS FOR ASPIRATION AND IRRIGATION OF JOINTS.

DR. J. W. CHURCHMAN, New Haven: The spinal cord is an instance of a part of the body where infection is still an unsolved problem as regards surgical treatment. The joints present another unsolved problem of the same character. In the early days the same principles, incision and drainage, were applied to these diseases as to infection elsewhere. However, it was soon realized that this method would give unsatisfactory results, for if organisms got into a mucous membrane well below the surface, it was almost impossible to dislodge them. If they had penetrated to the base of the mucous membrane, these organisms persisted throughout life. We know of no antiseptic that will kill the organisms without destroying the mucous membrane itself. The earlier treatment has given place gradually to various forms of aspiration and irrigation; and the apparatus that I will show you is designed to enable us, with perfect technic (which is very essential) to aspirate a joint and wash it out, distending the joint at the same time, so that the material will reach all recesses of it. Any desired antiseptic fluid may be used without exposing the joint to subsequent infection. We aim to fill not only the space between the bones, but also all of the interstices. The apparatus we use consists of a series of tubes which connect, through common openings, with the tube inserted into the joint and with the tube leading from the pump, which can provide a force or suction power. The apparatus can be taken apart and cleaned, and can be autoclaved just as it stands. It is necessary to get the joint clean, the walls of which are lined and covered with little chunks of fibrin that must be first washed clean. We collect the pus for purposes of culture, forcing it into this bottle. When the joint is clean we fill the bottle with what we want to use, and then we force that into the joint. After the joint is full of the irrigating fluid, we draw it back again, and we may even repeat that operation with another fluid. I have used this method in two cases of arthritis and the results have been very satisfactory, in fact the second case was completely cured.

GENTIAN VIOLET IN SURGERY.

INFLUENCE OF GENTIAN VIOLET ON TISSUE CULTURES.

DR. J. W. CHURCHMAN, New Haven: We have found that a marked bactericidal action is possessed by gentian violet dye; and it was shown that Gram positive organisms were killed by it. At the present time it cannot be injected into the body, be-

cause if gentian violet is injected into the ear of a rabbit, in doses sufficient to kill the germs, the animal changes the stain within two hours, and renders it harmless to the organisms. That fact, however, may turn out to be of value, because if you can make the stain reach the organisms and stay unchanged long enough to kill them, and the body will change the stain and get rid of it, you will have a very valuable antiseptic. What is the effect of these stains on tissues? We have some cultures of tissues growing in gentian violet, absolutely unimpaired. In gentian violet we have a material which kills organisms, but does not impair tissue growth. We have a substance which is changed by a living being in the tissues, and which is harmless to the animal. That makes it valuable for killing organisms. The problem is to get it in contact with the organisms. When that is done, this or some similar material will be of great use in surgery.

STITCH ULCERS AFTER GASTRO-ENTEROSTOMY.

DR. J. M. FLINT, New Haven: The end results of our investigations make us believe that stitch ulcers of the jejunum following gastro-enterostomy are due either to sloughing out of the stitch or to changes in the circulation that the stitch has produced.

EXHIBIT OF FACIAL HEMIATROPHY.

DR. MAX MAILHOUSE, New Haven: Facial hemiatrophy is a rare disease, and usually occurs between the ages of ten and twenty years. This gentleman started in at the age of eighteen, with some discolored spots (from one-half to one inch in diameter), the manner in which it frequently begins, and gradually atrophy set in with some twitching of the muscles, and some pain in them, the atrophy involving skin, subcutaneous cellular tissue, muscles and bone. His family history is entirely negative and there is nothing specific in the case. There is no beard growing on the right side of the face, but there is a beard on the left side. His mouth has been drawn to the right, he can move his jaw to the left, but not to the right, there is marked atrophy of the right side of the tongue and also of the soft palate; but he has no difficulty in swallowing. The pathology of the case is unknown. However, Starr now classifies it under fifth-nerve affection. I think that there is more to it than that. It is a question whether there may not be some pituitary disturbance. There is considerable difference in the size of his right hand as compared with his left. It is much larger.

EXHIBIT OF CASE OF ACROMEGALY.

DR. OLIVER T. OSBORNE, New Haven: This case of acromegaly has no serious symptoms; but he has developed in recent years a perfectly typical hand and you could make a diagnosis from the face also. The jaw comes forward. Hypertrophy of the soft tissues goes on coincidently; but in this man's case it was not disturbed very much. Acromegaly means increased secretion of the pituitary gland, at one time or another. It is this way: the pituitary, as a gland, has three parts: The anterior, the middle and the posterior. If the anterior lobe is removed the animal dies in a few days. If a portion of the anterior part is left, the animal seems to live. If the anterior part of the gland hypersecretes, we have a condition of bone growth. If that begins when the human animal is young or a youth, before the cartilages of the epiphyses have united, he will become a giant. With this disturbance of the pituitary body there is generally more or less genital deterioration, loss of sexual power. These patients live from ten to twenty-five years and die normally from circulatory weakness and cardiac failure. There is no treatment that is curative.

EXHIBIT OF INTERESTING MEDICAL CASES.

DR. WILDER TILESTON, New Haven: There have been a number of ingenious methods devised for the accurate estimation of various substances in the blood. Among the most important are: The methods for the estimation of cholesterin in the blood; the estimation of sugar in diabetes; the estimation of uric acid; and lastly, the estimation of the nonprotein nitrogen in the urea. I shall deal largely with the last-named. In health, the method has but little effect, the chief interest centering around nephritis and other kidney diseases. We have examined a considerable number of such cases. A uremic case showed the effect of diet on the total nitrogen. There were 56 mgm. of nonprotein nitrogen. After a few days of low protein diet, it sank to 24 mgm. In nephritis we have found all figures, from normal to ten times the normal. No case of uremia which showed high figures live more than a few weeks. This estimation also promises to be of value in hypertrophy of the prostate where operation is considered; but any patient showing as high as 75 mgm. would be a doubtful case for operation. In all cases of lead poisoning we found increased nitrogen—the lowest being 30 mgm. This shows how injurious the influence of lead is on the kidneys. Acute intestinal obstruction was the only disease not of the kidney that showed a marked increase. Acute infectious diseases showed only a moderate increase. In syphilis we found a marked increase in about half the cases, indicating that the kidneys are more often affected than has hitherto been supposed. The value of this method from the standpoint of diagnosis and prognosis is very apparent.

EXHIBIT OF INTERESTING MEDICAL CASES.

DR. GEORGE BLUMER, New Haven: I will speak ot some points that have come up in our experience with pericarditis, especially with effusion. This disease is often almost without pain. One case of it with effusion, came to the hospital complaning of pain; one made no complaint; and the other two complained of discomfort in the region of the heart. Pericarditis is often only recognized on the autopsy table, and is frequently found unexpectedly in routine examinations. We have had two or three cases in which the effusion was undoubtedly proved and in which the apex impulse did not disappear. The presence of pericardial friction sound does not rule out pericarditis with effusion. One is apt to mistake extensive effusion with consolidation, for pleurisy with effusion. In fact the pericardium has been tapped in mistake for the pleura. The x-ray is valuable, not only in diagnosis, but as an indication of where to tap the patient. This little boy entered the ward with rheumatic endocarditis. Here is the right border of the heart with no effusion at the base. He recovered completely after the tap-

ping. We had one case where we tapped and the dulness persisted. Then we tapped the pleura, and found pleurisy there.

The following officers were elected for the ensuing year: President, Dr. Oliver C. Smith, Hartford; first vice-president, Dr. Stephen J. Maher, New Haven; second vice-president, Dr. John B. Kent, Putnam; secretary, Dr. M. McR. Scarbrough, New Haven; treasurer, Dr. Joseph H. Townsend, New Haven. The next annual meeting will be held in Hartford, on the third Wednesday and Thursday of May, 1915.

Book Reviews.

Treatment of Neurasthenia. By DR. PAUL HARTENBERG; translated by ERNEST PLAYFAIR, M.B., M.R.C.P. 12 mo, pp. 283. Edinburgh, Glasgow and London: Henry Frowde, and Hodder and Stoughton. Oxford University Press. 1914.

In this little book Dr. Hartenberg takes up the description and treatment of neurasthenia. This he limits to simple nervous depression, and in the chapters devoted to diagnosis he very clearly distinguishes between this disease or condition and the various forms of mental depression and psychoneuroses with obsessions, phobias and the like in a manner that is at once simple and convincing, pleading for exactness in diagnosis. The chapters on treatment, in which he advises various forms of tonic treatment, medicinal, hygienic and physiological, are suggestive and helpful. He also outlines clearly his ideas of the rôle of psychotherapy in this condition, assigning to it a somewhat subordinate duty, consisting chiefly of explanation and encouragement.

New Contribution to the Etiology and Pathogenesis of Pellagra. By GIULIO ALESSANDRINI and ALBERTO SCALA. Rome: National Typography of G. Bertero and Company. 1914.

This monograph of research from the Institute of Experimental Hygiene of the University of Rome, represents investigations carried on since 1909. A series of 94 animal experiments and 10 human cases are reported. The authors believe they have demonstrated that pellagra is not solely a nutritional disease, dependent on the ingestion of spoiled maize, but that it is a chemical acidosis, localized to regions where waters are drunk that have been exclusively in contact with argillaceous soils; that it is in short a silicon intoxication, which causes retention of salts, their fixation in the tissues, and then an excessive liberation of mineral acids which produces the lesions and disturbances of the disease. They consider that the cure in acute cases is injection of neutral citrate of sodium. The prophylaxis is obvious. Whether or not these theories prove correct, the work is an interesting contribution to the study of pellagra from the land of Lombroso. It is illustrated by 30 figures in the text and 8 colored microscopic plates.

Isolation Hospitals. By H. FRANKLIN POWERS, M.D. (Lond.), D.P.H. (Camb.); formerly first assistant medical officer of the Local Government Board. Cambridge: University Press. 1914.

This volume is the first of a projected "Cambridge Public Health Series," analogous to the "Oxford Medical Publications," to be edited by G. S. Graham-Smith, M.D., and J. E. Purvis, M.A., and to consist of monographs by acknowledged experts in various topics of the general subject. It is intended to appeal to practitioners of medicine, to bacteriologists and laboratory students, to municipal engineers and architects, to medical officers of health and sanitary inspectors, to teachers and administrators, to members of public health and hygiene committees.

This first volume fulfils well the promise of the series. Upon the author's untimely death during its publication, the work was corrected and completed by Dr. R. Bruce Low, formerly of the Local Government Board. It is illustrated by 55 excellent text figures, and constitutes a worthy introduction to what promises to be an important series of medical contributions.

The Hall of the Georgia Medical Society. By J. EWING MEARS, M.D., LL.D. Philadelphia: Dornan. 1914.

This monograph is an account of the ceremonies and addresses at the opening and dedication of the new hall of the Georgia Medical Society, at Savannah, Ga., on March 31, 1914. It is illustrated by two woodcuts and a full-page plate. The ceremonies on this occasion were described in the issue of the JOURNAL for May 14 (p. 772).

Anatomy and Physiology of the Eye and Its Appendages. By JOHN WELSH CROSKEY, M.D., ophthalmic surgeon to the Philadelphia General Hospital. Philadelphia: Smith-Edwards Company. 1914.

This monograph is a convenient brief manual of the anatomy and physiology of the eye, representing the author's instruction to students and nurses. It is well illustrated by two excellent colored plates.

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A NOTABLE SANITARY LAWSUIT.

THE New York State Health Department reports that a verdict was recently rendered at Auburn, in that state, in the case of the people against the board of trustees of the Union Free School of Moravia, which promises to set an important precedent in connection with problems of sewage disposal and water pollution. This school, which is attended by some three hundred pupils, discharges its sewage, it appears, by a four-inch sewer upon the bank of Mill Creek, a small stream emptying into the southern end of Owasco Lake, from which the city of Auburn, situated at the northern end of the lake and with a population of about 35,000, derives its public water supply. In 1911 an indictment was found against the trustees of the school for maintaining a public nuisance, under two sections of the Criminal Code, on three counts charging them with "offending public decency," "annoying, injuring and endangering the comfort, repose, health or safety of a considerable number of persons," and rendering "a considerable number of persons insecure in life or the use of property." The case did not come up for trial until the spring of 1913, when among the facts shown were the following. Considerable fecal matter accumulates on the bank of Mill Creek, at the mouth of the sewer, to be washed down into Lake Owasco (about four miles distant) in times of rain. In the autumn of 1907 the village of Moravia suffered from an outbreak of typhoid fever, with some twenty cases, at least three of which were among pupils of the school, and two of the latter patients afterwards returned as convalescents. In March, 1908, there was a heavy thaw, and, the ice breaking up, the level of the lake rose rapidly, while at the same time a marked increase was noted in the bacterial counts in the Auburn water. Shortly afterwards (in April) there broke out a sharp epidemic of typhoid in Auburn, comprising thirty-four cases within two months. The outbreak was distributed quite evenly over the city, it had all the characteristics of a water epidemic, and no other cases than those at Moravia which might have polluted the waters tributary to the lake were known to have occurred.

This first trial resulted in a disagreement, the jury standing ten for conviction and two for acquittal. At the recent second trial, as at the first, the defense denied the possibility of the causation of the Auburn epidemic assigned by the prosecution, claiming that sanitarians familiar with the protective effect of storage would certainly question the possibility of the transmission of virulent typhoid germs down a lake ten miles long and a mile wide, with an almost negligible current. This difficulty was met, however, by citing the results of a remarkable study of wind currents made by Mr. Ackerman, engineer of the Auburn water board, which has been reported in the last annual proceedings of the American Waterworks Association. By float measurements he worked out the relation between wind movement and surface water movement at different wind velocities, and showed that with south winds, which prevailed for considerable periods in the spring of 1908, surface water could easily be carried from the head to the foot of the lake in the space of two or three days. The principal expert witnesses for the people were Prof. W. P. Mason of the Rennselaer Polytechnic Institute, Troy, Prof. C. E. A. Winslow of New York, and Dr. F. M. Meader of Syracuse, and the jury, while finding for the defendant on the first two counts, convicted on the third count, rendering "a considerable number of persons insecure in life or the use of property." The state department of health regards this case of special interest in two respects: from the scientific standpoint, on account of the light it throws on the effect of wind currents and the consequent danger of long distance water pollution, and from the administrative standpoint, on account of the comparatively untried method it suggests for dealing with aggravated conditions of water pollution.

In connection with the case it is also of interest to note that the department has lately received the report of a special commission of experts which Commissioner Biggs appointed some time since to take into consideration a number of pressing problems as to the location of tuberculosis sanatoriums and other institutions upon watersheds used as gathering grounds for public water supplies and problems involving the general policy of the department toward sewage disposal plants and water supplies throughout the state. This commission consisted of Dr. T. Mitchell Prudden, vice-president of the Rockefeller Institute; H. N. Ogden, professor of sanitary engineering, Cornell University; Dr. W. H. Park, director of research laboratories, New York City Health Department; C. C. Whipple, professor of sanitary engineering, Harvard University; and C. E. A. Winslow, professor of biology, College of the City of New York. The first part of the report is devoted to seven specific questions propounded in reference to the matters mentioned and the answers to these by the commission. Then follow recommendations in regard to two specific problems: one having to do with a proposed site for a tuberculosis hospital in Westchester County, and the other with proposed changes in the sewage disposal plant of the Bedford State Reformatory for Women. In the concluding portion the following general recommendations are made: The state department of health should have power to require such improvements as it may deem necessary for the protection of the public health in the construction and operation of any system of public water supply. No new public water supply should be installed, and no new source of water drawn from, without the approval of the department. Whenever in any case the requirements as to the operation of a water supply are, in its opinion, not met, the department should have the power to take over, after due notice, the operation of the system, and continue such operation so long as it may deem necessary for the protection of the public health, such operation to be at the expense of the municipality, corporation or person owning such water supply. Whenever the sewage disposal plant of any institution or any watershed draining into a public water supply is, in the opinion of the department, operated in such a manner as to constitute a nuisance or a menace to public health, the department should have the power to take over the operation of such plant, and to continue such operation as long as it may deem necessary for the protection of the public health, or until the abatement of the nuisance; the expense of such operation to be borne by the institution. For the proper control of the water purification plants in the state, regular laboratory analyses of the treated water should be made by the municipality or water company owning the same, the results of which analyses, together with all essential operating data, should be promptly transmitted to the department.

TWO IMPORTANT MEDICAL CONGRESSES.

THE fifth annual session of the Clinical Congress of Surgeons of North America was opened in London on July 27, with about 1200 members in attendance. Addresses were made by Mr. Walter Hines Page, the United States ambassador to England, by Sir Rickman Godlee, president of the Royal College of Surgeons of England, by Dr. George Emerson Brewer, and by Dr. John B. Murphy. The work of the congress was devoted largely to clinical demonstrations. Among the distinguished foreign physicians who addressed the evening sessions were Sir William Osler, Prof. Tuffier of Paris, Prof. Krönig of Freiburg, Prof. von Eiselsberg of Vienna, Prof. Schmiegelow of Copenhagen, Sir St. Clair Thomson and Sir Watson Cheyne. At the closing session on Aug. 1 the following officers were elected: President, Dr. Charles H. Mayo, of Rochester, Minn.; first vice-president, Dr. H. A. Bruce, Toronto; second vice-president, Dr. Robert L. Dickinson, Brooklyn, N. Y.; secretary, Dr. Franklin H. Martin, Chicago; treasurer, Dr. Allen B. Kanavel, Chicago; general manager, A. D. Ballou, Chicago.

The eighty-second annual meeting of the British Medical Association was held during the same week at Aberdeen, Scotland. The president's address was delivered on July 28 by Sir Alexander Ogston, M.D., K.C.V.O., on "The Making of a Scottish Medical School." The address in medicine was delivered on July 29 by Dr. Archibald E. Garrod, F.R.C.P., F.R.S., on "Medicine from the Chemical Standpoint." The address in surgery was delivered on July 30 by Sir John Bland-Sutton, F.R.C.S., on "The Surgeon of the Future." In comparing the surgery

of the past with that which it may be hoped the future will afford, Dr. Sutton said in part:—

"In pre-Listerian days the path to surgery lay through the dissecting-room. A thorough practical knowledge of the anatomy of man was and is indispensable to a sound surgeon. Many surgeons whose names are prominent in the history of surgery,—from John Hunter to Fergusson,—taught anatomy by dissection. Surgeons no longer act as demonstrators of anatomy or conduct post-mortem examinations; the principles of antiseptic surgery forbid such occupations. The practical training in the dissecting-room and post-mortem room teaches men something they cannot learn from books,—the appreciation of tissue; this means, in plain terms, the power to recognize organs and tissues, normal and abnormal, at sight or by touch in the course of an operation.

"Surgeons are of two types, they are either craftsmen or biologists. The surgical craftsman invents variations in technic; metal plates, wires and screws for bones; or fancy methods of suturing wounds. Some expend their ingenuity on surgical cutlery and improve the knives and needles. The utility of a simple tool, such as the clip forceps is inestimable. In spite of much ingenuity among surgeons, an ideal ligature material awaits discovery. Clever contrivances like the laryngoscope, bronchoscope, and cystoscope have revolutionized special branches of surgery.

"The biological surgeon studies pathology in its broadest aspect and investigates, in the laboratory, problems of morbid anatomy and bacteriology. The diagnostic value of reports issued from the laboratory by the pathologist and the bacteriologist, to be of value, must be estimated with the help of clinical experience. If the surgeon has had no experience in bacteriological methods he must accept the reports from the laboratory with the hopefulness of a patient swallowing physic compounded from a prescription he does not understand and which he is often unable to read. The training of surgeons in clinical pathology is of great importance, and it requires little foresight to recognize that for men ambitious to attain high places in surgery the high road lies through the pathological institute."

CONVICTION OF A MIDWIFE: COMMONWEALTH vs. CONNOR.

In the East Cambridge municipal court a midwife, Katherine Connor, was convicted, on July 28, in charges connected with the blindness of a baby. Two mothers, one of them the mother of the blind baby, testified that Mrs. Connor had attended them in childbirth. In so doing she had practised obstetrics, a recognized branch of medicine; and not being a registered physician, she had thus violated (1) the medical practice act. The mother of the blind baby also testified that Mrs. Connor had seen the baby's eyes red and swollen and showing an unnatural discharge. Having seen "many such cases before," the midwife did not advise calling in an oculist, but herself provided a brown medicine which she dropped into the baby's eyes, and urged the mother to continue using. Here again, and in a more usual sense of the words, this midwife practised medicine without a license. According to the testimony of the assistant city clerk, Mrs. Connor also failed to give notice of the child's birth until twelve weeks afterwards, when legal proceedings had been begun. This midwife thus violated (2) the law which requires the filing of birth returns within twenty-four hours. As shown through a member of the local board of health, she also failed to report the symptoms of ophthalmia neonatorum. If a series of previous convictions have not been erroneous she, therefore violated (3) the law requiring a "nurse, relative or other attendant in charge" to give notice of such symptoms within six hours. On a technical doubt whether the mother did not share the responsibility for reporting these symptoms, the court acquitted the midwife on this third charge. On the two other charges, however, the court found her guilty.

The complaints were made by a member of the state police on behalf of the Board of Registration in Medicine and by the Massachusetts Society for the Prevention of Cruelty to Children. The case for the commonwealth was conducted by the assistant counsel of the Society for the Prevention of Cruelty to Children. On the request of the prosecution, and because of the defendant's extreme age (84), sentence was suspended and the case placed on file, on the understanding, however, that the defendant would absolutely *give up practice.*

This is, unfortunately, not the first case of blindness among babies in the practice of midwives, either in Cambridge and Boston or in other Massachusetts cities. It is to be hoped that the conviction of Mrs. Connor will not merely stop the activity of one dangerous practitioner, but will be a warning to others whose ignorance or carelessness threaten eyesight and even life.

THE EUROPEAN WAR.

THE terrific swiftness with which, from a status of apparent peace, a colossal war has broken out among the nations of Europe may be compared to the dramatic suddenness of onset of some of the acutely fulminating human infections. Apart from the intense interest of the racial questions involved, our professional concern in this war will of course be largely with its medical aspects. The medical departments of the great European armies and navies are elaborately and efficiently organized, and should demonstrate on a scale never hitherto possible the achievements of modern military and naval surgery, and camp sanitation and hygiene.

Civilians, too, will be called upon to take their part; and it is gratifying to note that among the first offers made to the French government was that of the directors of the American Hospital at Paris to fit up a wing in a school at Neuilly as a hospital to accommodate 200 French wounded, and to provide a full staff of American physicians and nurses. On Aug. 1 the municipal council of Moscow appropriated 1,000,000 roubles ($5,000,000), for the Russian Red Cross Service.

"The Russian Red Cross, one of the strongest in the world, comprises a board of administration, 8 boards of district administration, 95 boards of local administration, 509 local Red Cross committees, 60 communities of nurses, 90 ambulatory clinics, six emergency hospitals and seven convalescent homes, besides numberless asylums and homes for the care of widows and children of soldiers.

"In Austria alone there are over 65,000 Red Cross members, with the estimated wealth of the society placed at something like $1,741,249. In Japan, which would aid the British, the permanent endowment fund alone is over $10,000,000. The estimated wealth of the French Red Cross Society amounts to nearly $5,000,000.

There need probably be no apprehension for the safety of American physicians in Europe, many of whom are now travelling after the Clinical Congress just adjourned in London. To our professional brethren of all the nations involved we can only extend our cordial sympathy, with confident assurance that in their share in this great struggle they and the nurses who work with them will exemplify the world's noblest ideals of peace.

MEDICAL NOTES.

CAUCASIAN TROPICAL SANITATION.—At a recent meeting in Mobile, Ala., of the Alumni Association of the University of Alabama Medical School, Dr. William C. Gorgas, U. S. A., spoke in part as follows on the relation of tropical sanitation to the habitability of the tropics by Caucasians:—

"I have lived for three years in South Dakota, where the winters are very rigorous, and I have spent many years in the tropics. Up in the Dakotas labor is expensive and arduous because of the long winters. In the tropics very little labor is necessary to support life.

"Given the same amount of labor in the tropics as in the Dakotas, I am positive that it would produce many times the wealth of the North. If this is a fact, it is also self-evident that it will be only a question of time till this condition induces English-speaking people to settle the tropical countries. The health problem is the only obstacle, and it can be eliminated. It has been demonstrated that modern tropical sanitation not only protects the men and women in these countries, but that with such protection they live as comfortably and healthfully as in the Northern States. Our work on the Canal Zone demonstrated that men can live and work and produce in as good health as anywhere in the world. There was nowhere a place so unhealthy as this region before we commenced to construct the canal.

"Civilization has placed her hand upon that country, a new empire has sprung up and it will develop so that wealth can be easily produced without the waste of labor and effort. We can look forward to the time when the Anglo-Saxon race will people the tropical countries. Our Southern states, and notably Alabama, will see the time when the Gulf states, the West Indies, Mexico, Central America and South America are as dense with people as India, and the only thing that impedes immigration now is tropical sanitation."

EFFECTS OF THE WAR.—It is reported that there has been a rapid rise in the price of certain drugs during the past week. Among these is opium, menthol, thymol, Russian cantharides and ergot. Carbolic acid is said to have doubled in price and wholesalers are conserving their supply. The drug and chemical dealers in general are among those which receive the hardest blow from the war, inasmuch as their business depends largely upon uninterrupted trade with foreign countries. It is also of interest to the medical profession that the price of automobile tires has been considerably advanced, due to the small amount of crude rubber in the country,

and the probability that the war will prevent importation of this commodity.

The Carrion Monument Fund.—At the sixth Pan-American Congress, held last year at Lima, Peru, a fund was started to erect a monument to Daniel A. Carrion, a medical student of that city who in 1885 died from the effect of a voluntary experimental inoculation with verruga. Contributions may be sent to Dr. E. Odriozola, dean of the medical faculty of Lima.

BOSTON AND NEW ENGLAND.

Massachusetts Association of Boards of Health.—A quarterly meeting of the Massachusetts Association of Boards of Health, held on July 30 at Galloupe's Island Quarantine Hospital, was attended by about 70 members from all parts of the commonwealth. Papers were read by Prof. George C. Whipple, of Harvard University, on "Sewage Disposal in the Country Village and Small City," and by Dr. E. H. Place, of the Boston City Hospital, on "Scarlet Fever."

Boston Death-Rates in 1913.—A recently published bulletin of the United States Public Health Service shows that in 1913, among American cities with over 500,000 inhabitants, Boston had the lowest death-rates from diphtheria, malaria, meningitis, smallpox, tuberculosis, and typhoid.

"In Boston the death-rate of diphtheria cases per 1000 inhabitants was 3.013. The death-rate per 100 cases was 7.08. In Philadelphia the case-rate was only 1.603, but the death-rate was 13.76. St. Louis is ranked next to Boston, with a case-rate of 3.882 and a death-rate of 7.41.

"During the year there were only 28 cases of malaria in Boston, with no deaths. In New York there were 13 deaths and in Philadelphia five deaths.

"The number of deaths in Boston from epidemic cerebrospinal meningitis was four, as compared with 202 in New York, 161 in Philadelphia, 158 in Detroit, 58 in Chicago, 53 in Cleveland and 12 in Pittsburgh.

"In Boston there was only one case of smallpox, without a single death. Chicago had 136 cases, with one death, Cleveland had 19 cases, Detroit had 539 cases with one death, New York had 20 cases, Philadelphia 19 cases, Pittsburgh two cases, and St. Louis 28 cases.

"All death-rates were high for tuberculosis, yet Boston's was the lowest. This city had a case-rate of 4.827 and a death-rate of 36.13. The city to approach nearest to this was Chicago, with a case-rate of 3.974 and a death-rate of 41.28.

"With typhoid fever there were .705 cases for every 1000 inhabitants and 11.79 deaths for every 100 cases. New York ranked second, with a case-rate of .508 and a death-rate of 13.73. The actual number of deaths in Boston was 60. In Detroit there were 143 deaths.

"With measles Boston's case-rate was 7.789 and her death-rate was 1.37. This was second to Philadelphia's record of a 9.556 case-rate and a 1.27 death-rate.

"In scarlet fever the case-rate here was 2.630 with a death-rate of 4.05. St. Louis bettered this with a case-rate of 1.511 and a death-rate of 3.48."

Cases of Infectious Diseases reported to the Boston Board of Health for the week ending August 4, 1914, are as follows: Diphtheria, 34, of which 1 was non-resident; scarlatina, 16, of which 2 were non-residents, measles, 39, of which 6 were non-residents; typhoid fever, 9, of which 1 was non-resident; tuberculosis, 34, of which 1 was non-resident.

The death-rate for the week was 13.61.

NEW YORK.

Vaccination in Schools.—The Court of Appeals has recently handed down an important decision, confirming the prosecution, in the case of Hagbard Ekerold, who sent his unvaccinated son to a public school in New York and, on the refusal of the school authorities to admit the child, kept him out of school. The opinion of the Court, written by Justice Hiscock, was in part as follows: "The defendant was duly convicted before a magistrate of violating the duty imposed on him as a parent by section 624 of the Education Law; which violation is made a misdemeanor. Our public school system has been developed with great pains and solicitude, and its maintenance and support have been recognized as so important for the welfare of the state that they have been provided for and safeguarded in the Constitution itself. As a part of this system a statute has been passed requiring attendance at school of children within certain limits. If indifferent or selfish parents for ulterior purposes, such as the desire to place young children at labor instead of school or from capricious or recalcitrant motives, may be allowed to manufacture easy excuses for not sending their children to school, a ready method will have been developed for evading the statute compelling such attendance. It is perfectly evident that in a great city like New York regulations must be adopted for the purpose of preserving discipline, order and health in the pub-

lic schools. The question which within certain limits is presented here is whether the statute and the by-laws of the board of education in that city, adopted under and in accordance with the statute requiring vaccination as a condition of attending the public schools, are under ordinary conditions so unusual or oppressive that a parent should be allowed to make his unwillingness to comply therewith a basis for not sending his children to school; for that is what the present position of the defendant amounts to. I do not think they are of such a character. So far as the evidence discloses, the defendant's refusal to comply with the requirements of attendance at school was arbitrary and capricious, and as one reads the record and argument of his counsel the impression somehow arises that he was more interested in asserting his right to refuse to comply with the law than he was actuated by the purpose of protecting his child from some possible or supposed injury. I think there is still another reason why the defendant was not excused for disobedience of the law requiring him to see to the education of his child. The vaccination statute applies only to the public schools. It is well known that there are schools of other kinds and classes which might have been attended by the defendant's child, where attendance would not have been subject to the conditions which he now urges as an excuse for his failure to send his child to school. It is answered in his behalf to this suggestion that that would entail expense. This might or might not be so, and even if it were, it would not be sufficient to excuse the present position and situation of the defendant."

NEW HEALTH MONTHLY BULLETIN.—New Rochelle, Westchester County, the acting health officer of which Lieutenant-Colonel Charles E. Woodruff, Medical Corps, U. S. A. (retired), is the latest addition to the list of cities of the state now issuing a health monthly bulletin.

ADVICE TO MOTHERS.—State-Commissioner of Health Briggs has commenced the sending to every mother of a child whose birth is reported to the department of a friendly letter of advice, signed by himself, in which he expresses the wish that she shall feel that the State Health Department was created and is supported by the taxpayers to give her baby every chance to grow up to be a strong, healthy citizen. The physicians of the mothers are not likely to make any objection to these letters, as in one portion it is said: "The one thing to remember, however, above all others, is that your physician is the best protector of your baby's health. Consult him every time the baby shows the least sign of not being well."

BATHS.—In a paper on the Public Baths of New York City published in the *Monthly Bulletin* of the City Health Department, Dr. C. F. Bolduan, chief of the Division of Public Health Education, states that in the borough of Manhattan there are 12 free public interior baths, and until this year there have been 11 free floating baths. The borough of Brooklyn has eight interior baths and a large public bath at the seaside, and until this year has had two floating baths. In addition to these bathing facilities, the city provides baths, almost all of the shower type, in many of its public schools. Their value as a necessary equipment of public school buildings, particularly in congested districts, is being gradually recognized. At the present time 67 of the schoolhouses (58 of which are in Manhattan and Brooklyn) are thus equipped, and one, the High School of Commerce, has a swimming school in addition; while there is also a fine swimming pool in the College of the City of New York. Undoubtedly the most popular of all the baths maintained by the city is the seaside bath at Coney Island. In addition to the fine ocean bathing beach, over 1,000 feet long, this consists of a substantial concrete structure containing 1,300 individual dressing-rooms for women and 700, each for eight persons, for men; so that the bath will accommodate about 7,000 patrons at one time. During the year 1913 there were over 10,000,000 free baths given by the city in floating and permanent baths. It is apparent that some change must be made in the policy of the city toward river bathing, as under conditions now existing this is practically the same as bathing in diluted sewage. All things considered, it would seem best to educate the public to the use of interior baths, open all the year round.

TETANUS ANTITOXIN FOR AUSTRIAN ARMY.—The City Health Department received on Aug. 4, a cablegram from the Serum Institute of Vienna requesting the immediate delivery of 50 litres of tetanus antitoxin for use in the Austria-Hungarian army. This amount exceeded the supply on hand, but an order was sent to

the laboratory at Otisville, where the antitoxin is prepared, to furnish the desired quantity as promptly as possible.

Current Literature

MEDICAL RECORD.

JULY 25, 1914.

1. SATTERTHWAITE, T. E. *Some Problems in Genetics.*
2. WENDKOS, S. *Chronic Intestinal Stasis.*
3. BURNHAM, A. C. *Parenteral Nutrition and Its Surgical Application, with Special Reference to the Use of Glucose Solutions in Postoperative Shock.*
4. PALACIOS, G. D. *Why Yellow Fever Is Endemic in the Tropical and Atlantic Region.*
5. KERR, L. *The Interrelation of the Ex-Interne and the Hospital.*
6. SCHWARZ, E. *Metrorrhagia.*
7. CRUICE, J. M. *The Diagnosis of Chronic Bronchitis.*
8. MILLER, H. R. *A Preliminary Report on a Method of Treatment for Diphtheria Carriers.*

NEW YORK MEDICAL JOURNAL.

JULY 25, 1914.

1. DICKINSON, R. L. *Primary Perineorrhaphy by Buried and Subsurface Catgut Suture.*
2. CASE, J. T. *Roentgen Examination of the Appendix.*
3. MCGLINN, J. A. *Tubal Gestation.*
4. *BROOKS, H. *The Significance of High Blood-Pressure.*
5. DAVIDSON, A. J. *Pott's Paralysis. Restoration by Albee's Operation.*
6. CRIGLER, L. W. *The Present Status of Cataract Extraction.*
7. WEISS, R. *The Quantitative Estimation of Uric Acid, Cholesterin, and Sugar in the Blood.*
8. WHITNEY, C. E. *Protection of the Public by the Law.*
9. WAUGH, W. F. *Is Constipation an Evil?*

4. Brooks argues that high blood-pressure is not a cause, but usually a result. It is not a disease though the evidence of it. It is not pathological, but usually, if not always, physiological in meaning. It is truly a conservative process and tends more to prolong life than to shorten it. Where its causes cannot be removed it is not to be treated, but maintained. [L. D. C.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

JULY 25, 1914.

1. FRAZAER, C. H. *The Cerebrospinal Fluid as a Problem in Intracranial Surgery.*
2. *DAVIS, E. P. *The Treatment of Placenta Previa.*
3. *DEAVER, J. B. *Hysterotomy.*
4. RUCKER, W. C. *The Necessity for the Establishment of a National Leprosarium.*
5. DYER, I. *The Duty of the Government in Leprosy Cure and Control.*
6. *WILBUR, R. L. *The Therapeusis of Pericarditis.*
7. LITCHFIELD, L. *The Abuse of Normal Salt Solution.*
8. *NEWBURGH, L. H. *Therapy of Cardiovascular Disturbances.*
9. JUDD, C. C. W. *A Comparison of Cholesterinized and Non-Cholesterinized Artificial Antigens in the Wassermann Reaction.*
10. HOSKINS, R. G., AND LOLELLITH, C. R. *The Adrenals and the Pulse-Rate.*
11. HENDERSON, Y. *The Time That the Breath Can Be Held as an Index for Acidosis.*

2. Davis reports seventeen cases of placenta previa treated with abdominal Cesarean section with no maternal mortality or morbidity and a fetal mortality of 40%.

3. Deaver shows why for the purpose of diagnosis of obscure conditions in the interior of the uterus, hysterotomy is a safe and sane procedure, and often makes the more serious and mutilating operation of hysterectomy unnecessary.

6. Wilbur makes the following statements, based on experimental evidence largely. The accessibility of the pericardium makes local treatment valuable and surgical treatment possible, and leads to the hope that further study may permit the application of remedies directly to the interior of the acutely or chronically inflamed sac. Induced pericarditis in animals offers a good field for study along this line.

8. Newburgh concludes as follows: "Since the blood-pressure is not low either in persons showing grave symptoms of pneumonia or in those dying of that disease, and since it has been proved that the vasomotor areas are normal in animals near death from pneumonia, it is logical to conclude that the vasomotor mechanism is not impaired in pneumonia. Strychnine does not improve or augment the work of the heart in persons suffering from broken cardiac compensation." It could not be shown that either strychnine or caffein stimulated the cardio-vascular apparatus in any of the conditions studied. [E. H. R.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

No. 26. JUNE 30, 1914.

1. GRAFE, E. *The Caramel Cure for Diabetes.*
2. *WILBRAND, E. *The Effect of Sodium Bicarbonate on Pancreatic Secretion.*
3. MOEWES, C., AND JAUER, K. *The Copper Treatment of Pulmonary Tuberculosis.*
4. MESSERSCHMIDT, T. *The Vaccine Treatment of Chronic Furunculosis of the Skin.*
5. *FÜRST. *The Growth of Pathogenic Intestinal Bacteria on Bread.*
6. SCHLOESSMANN. *Healing, with Good Function, of a Hand Nearly Severed from the Body.*
7. CALPERN, J. *The End Result of Pyloric Extirpation.*
8. STREREL, J. *Gonorrheal Keratitis Following Gonorrheal Vaccine. Metastatic Gonorrheal Conjunctivitis.*
9. MAUSS, T. *The Surgical Treatment of Spinal Cord Tumors.*
10. LEVINSON, A. *A Modified Pirquet's Mouth Spatula.*
11. RAUCH, R. *A Simple Method for the Treatment of Ektropion.*
12. DEUTSCH, S. *A Practical Circumcision Clamp.*
13. PFEIFFER, H. *The Occurrence of Peptolytic Ferments in the Serum of Burned Rabbits.*
14. MENDELBAUM, M. *The Occurrence of Peptolytic Ferments in Blood.*
15. FELDT, A. *The Tubercle Bacillus and Copper.*
16. WALTER, J. *Blood-pressure and Venous Stasis.*
17. GRASSL. *Politics and Science.*

2. Wilbrand studied the effect of sodium bicarbonate on pancreatic secretion in dogs by inserting separately cannulae into the duodenum and obtaining gastric juice, and a mixture of bile and pancreatic juices which were measured over intervals of time. In a control experiment the dog was given 100 gms. of meat. In other experiments the same amount of

meat was given with 10 gms. of sodium bicarbonate, either in tablet or solution. The sodium bicarbonate had slight effect on the gastric secretion, but a very definite action in checking the outflow of bile and pancreatic juice. Wilbrand argues from these observations that since the external secretion of the pancreas may be inhibited by sodium bicarbonate, it is probable that the internal secretion may be affected in a similar way. Therefore these experiments may be of certain practical value in the treatment of diabetes, as Wilbrand concludes that sodium bicarbonate affords a means for inhibiting the pancreatic functions.

5. Fürst reports an epidemic of typhoid fever in which bread seemed the most probable vehicle of transmission. The bread supply of the infected area was obtained from a bakery in a neighboring town where several cases occurred among the baker's staff. Other commoner sources for the epidemic were ruled out. Fürst, on this account, conducted inoculation experiments with different kinds of breads, and found that various organisms of the typhoid-cholera group could live in bread over considerable periods of time, depending on the hardness and thickness of the crust. From this evidence, Fürst believes that in future epidemics bread must be considered as a possible carrier of disease. [R. F.]

No. 27. JULY 7, 1914.

1. HESS, C. *Recent Experiments on Reaction to Light in Animals and Plants.*
2. RIEDER, H. *X-ray Studies in Appendicitis.*
3. v. STUBENRAUCH, L. *Arthritis Deformans in Relation to Recent Investigations.*
4. LESCHKE, E. *Studies on Renal Function.*
5. STRAUB, H. *Acidosis in Uremia.*
6. FLATOW, L. *The Effect of Blood Serum on Cascin.*
7. DEJONG, D. A. *Intradermal and Conjunctival Pregnancy Reactions.*
8. HERZFELD, E. *A Colorimetric Method for Determining Dialysable Substances Reacting with Ninhydrin.*
9. RHEIN, M. *Jaffé's Indican Test.*
10. SALZER. *The Derivation of Keratoblasts in Regeneration of the Cornea.*
11. GOLDSCHMIDT, M. *The Treatment of Pneumococcus Infections of the Eye with Ethylhydrocuprein.*
12. *KALL, K. *Salvarsan in Secondary Anemia and Diseases of Digestion.*
13. FÖHRENBACH, F. *Larosan in the Polyclinic.*
14. LICHTENSTEIN, A. *Albumin Milk.*
15. ANTONI. *The Dermatoses in Hysteria.*
16. KRAUS, E. *Anesthetization of the Uterus.*
17. v. BECKH-WIDMANSTETTER, H. A. *A New Ligature Carrier.*
18. *HOFFMANN, E. *Should Salvarsan be Used as a Prophylactic Measure in Cases of Soft Chancre?*

12. Kall has used intravenous injections of salvarsan or neo-salvarsan in secondary anemias. Arsenic given in this form has produced no toxic effects and has appeared to cause a rapid improvement in the blood picture, and gain in body weight. Kall believes that the intravenous use of arsenic reacts on the entire organism and on the blood-forming cells more quickly than when the drug is given by mouth, and obviates digestive disturbances or difficulties in resorption which occur when the drug is administered by other methods.

18. Hoffman admits that many cases of syphilis occur in cases which clinically appear to be of soft chancre. Nevertheless he considers that by careful examination, and by repeated Wassermann reactions, the occurrence of syphilis can be discovered. Hence salvarsan should not be used as a prophylactic measure in suspected cases, but should only be given when syphilis is known to exist. [R. F.]

BERLINER KLINISCHE WOCHENSCHRIFT.

No. 21. MAY 25, 1914.

1. *MEYER, E. *The Relation of Progressive Paralysis and Tabes to Syphilis, and the Question of Their Treatment.*
2. STRASSMANN, F. *Concerning Instruction in Legal Medicine.*
3. KLIENBERGER, C. *Nephritis in Typhoid and Paratyphoid (Nephrotyphus and Nephroparatyphus).*
4. ARON, H. *Experiments on the Influence of Nutrition on Growth.*
5. KAFEMANN, R. *Progress in Iodine Therapy.*
6. BIRNBAUM, R. *"Valamin" in Gynecological Practice.*
7. GOEBEL, O. *On the Theory of the Action of the Labyrinth.*
8. LOEWY, E. *Progress in Investigations Concerning Epilepsy.*

1. This is a short review of the subject in which the author takes up Noguchi's work in finding the spirocheta pallida in the brain of paralytics, and discusses the pros and cons of treatment with salvarsan and mercury. [R. H. M.]

ARCHIV FÜR KLINISCHE CHIRURGIE.

VOL. 104. PART 2.

11. AXHAUSEN, G. *New Experiments Concerning the Rôle of Cartilage Necrosis in the Pathogenesis of Arthritis Deformans.*
12. HART, C. *The Influence of the Thymus upon the Onset and Course of Basedow's Disease.*
13. DEMMER, F. *Pneumatosis Cystoides Intestini Hominis.*
14. KUMARIS, I. *Lymphangioma Cysticum "Pendullum" of the Peritoneum of the Diaphragm.*
15. TODYO, T. *Cystic Degeneration of the Mammary Gland.*
16. VISCHER, A. L. *Traumatic Subdural Bleeding after a Long Interval.*
17. *DATYNER, H. *Renal Hematuria.*
18. KISCH, E., AND GRÄTZ, H. *The Influence of the Sun's Rays on Tuberculous Fistulae.*
19. GROSS, H. *Tuberculosis of the Pancreatic Lymph Region. An "Aerogenous Infection"?*

17. Datyner, of Caspar's clinic, reviews the literature on renal hematuria, discusses the various opinions upon this subject, and reports three cases. He believes, as do most urologists, that in the majority of cases of so-called "essential hematuria" the bleeding is due to nephritis. He holds to the opinion, however that hematuria without any demonstrable cause may exist. Such cases he thinks may be due to an angioneurotic condition of one kidney, and he cites a report by Guthrie of hereditary hematuria. If the bleeding is associated with nephritis, Datyner believes it is probably due to the effect of the nephritic toxin on the blood-vessels of the kidney, which are thus rendered more pervious. In arriving at a diagnosis of essential hematuria, one may be misled by bleeding due to a tumor of the renal pelvis (in which case the renal function would be normal) or by a small uric acid stone situated in the cortex, or by the scratching of urinary crystals. Hypernephroma may be ruled out by demonstrating good function from the bleeding kidney. If one is certain of the diagnosis, and has ruled out tumor satisfactorily, he may treat the case by medical methods unless the colic or the bleeding requires intervention. If the diagnosis is in doubt, or if the bleeding is serious, operation should be resorted to. Nephrotomy should be done first, the writer believes, and nephrectomy only after nephrotomy fails, or in case of hemorrhage following nephrotomy. Decapsulation has been enough to stop the hemorrhage, but has not been done enough as yet for us to be certain of its advantages. [G. G. S.]

Vol. 104. Part 3.

20. Axhausen, G. *Free Bodies in Joints and Their Relation to Arthritis Deformans.*
21. Troell, A. *Chondroma of the Joint Capsule.*
22. *Schwarz, K. *The Causation and Surgical Treatment of Peptic Jejunal Ulcers.*
23. Zahradsicky. *The Results of Appendicitis Operations in 1913 and the Results of the Same Operations for the 16 Years 1898-1913.*
24. Hahn, A. *Three Cases of Paranephritis Due to Perforating Renal Calculi.*
25. Fossler, H. *The Causation of Cysts of the Spleen.*
26. *Ruge, E. *Operative Treatment of Stubborn Obstipation, with Description of a Simple New Method.*
27. Kappler, W., and Erkes, F. *The Value of the Focal Tuberculin Reaction in the Diagnosis of Obscure Hip Lesions.*
28. Keppler, W. *The Recognition of Actinomycosis.*

22. Schwarz has collected from the literature 136 cases of peptic jejunal ulcer following gastroenterostomy, and adds 10 cases from his own experience. Of the 146 cases, 36 died, 30 were unrelieved or relapsed, and the others have so far remained cured. He classifies the ulcers according to the results caused by their perforation, such as general peritonitis, sub-phrenic abscess, fistula into transverse colon, etc. He finds that the great majority of recurrences occur in men (due probably to the use of alcohol), and with few exceptions occur in gastroenterostomies of the anterior type, or in those with a long loop or done by the Y-method of Roux. The short loop posterior gastro-enterostomy is the best from the point of view of ulcer prevention, and this is so because the duodenal contents are after this operation best able to flow into the stomach and neutralize the gastric juice. Where there is no gastric juice, there will be no peptic ulcer. For the cure of these cases, Schwarz separates the gastro-enterostomy, closes the holes and does a new gastroenterostomy, taking care to suture the mucosa with fine catgut.

26. Ruge reports two cases of stubborn obstipation operated upon with success by a new method. The ileum was severed above the ileo-cecal valve, both ends closed, and a lateral anastomosis with sigmoid in one case, descending colon in the other, was done. The original feature of these operations was the narrowing of the lumen of the large bowel just above the anastomosis by encircling it with a strip of fascia. This is sutured about the gut just tightly enough to prevent the back-flow of feces, and yet loosely enough to allow the secretion of the large bowel to pass through. [G. G. S.]

Deutsches Archiv für Klinische Medizin.

Band 114. Heft 1 and 2. April, 1914.

1. v. Hoesslen, H. *Observation on Pulsus Alternans and Pseudoalternans.*
2. *Griessmann, B. *Functional Tests for Diseased Kidneys.*
3. Deutsch, F., and Schmuckler, W. *Tests for Renal Function by Phenolsulphonephthalein, and Schlayer's Methods.*
4. *Hedinger, M., and Schlayer. *Tests for Renal Activity by Means of Test Meals.*
5. Barautschek. *Excretion of Sodium Chloride in Heart Disease.*
6. Roth, O. *Diagnosis and Prognostic Importance of Pulsus Alternans.*
7. Hausmann, T. *Diagnosis of Hair Balls in the Stomach.*
8. Hess, O. *Single Muscle Cramps Produced by Peripheral Stimulation in the Region of the Ramus Descendens of the Hypoglossal Nerve.*

2. Griessman tried out the three tests for renal function which at the present time are receiving a good deal of attention in internal medicine. After having the patient on a known diet for a short period, 20 grams of salt are added on one day and the excretion noted. A few days later an increase of one or two litres of water is made to the usual amount and the ability to excrete that noted. Finally, 20 grams of urea are added in order to see the ability of the kidneys to excrete nitrogen. He describes his standard diet on which the patients are kept during the experiment. He concludes after a series of cases that as a rule disturbances occur in the excretion of both salt and nitrogen in chronic nephritis, but that cases occur in which only one or the other fails to be excreted. He believes, therefore, in the classification of Hidal and v. Müller. Although he had in mind to note the relation of these tests to the anatomical finding he did not have enough material to form any conclusions.

4. Hedinger and Schlayer in this report try a new plan for the study of renal conditions. It is to arrange the diet for a day and follow the urine throughout the day in order to see what effect the different foodstuffs and fluids taken have. These test meals for renal efficiency, as they call them, were first tried on normal individuals and the time of urinary excretions, etc., through the day noted, and charted. The plan was then tried out on a number of patients with chronic nephritis. The results from the charts are quite variable but the authors feel that the plan is of value and should be tried out further. They feel that it will be possible by this means to separate these cases which should be stimulated by diuretics from those that should be spared, etc. [C. F., Jr.]

Band 114. Heft 5 and 6. May 5, 1914.

1. Lapinsky, M. *The Question of Knee and Ankle Joint Disease Occurring at the Same Time as Diseases of the Visceral Organs.*
2. Chusten, T. *The Points in Dynamic Pulse Diagnosis.*
3. Renner, O. *The Innervation of the Adrenals.*
4. *Neumann, J. *Venous Pulse and Tricuspid Insufficiency.*
5. Hefter, J., and Siebeck, R. *Investigations in Nephritis. The Relation of Concentration of Nitrogen and Chlorides in Healthy and Diseased Kidneys.*
6. *Büdingen, T. *The Possibility of Nourishment of the Cardiac Muscle by Introducing Glucose Solution into the Circulation.*
7. Romers, B. *Essay on Arrhythmia Perpetua.*
8. *Rolly, F. *Respiratory Exchange in Chronic Anemic Conditions.*

4. Neumann has investigated the relation between venous pulse in the neck and insufficiency of the tricuspid valve. At one time it was thought that pulsation in the veins meant surely a tricuspid insufficiency, but more recent and careful study has upset this feeling. Neumann concludes that a positive venous pulse in auricular fibrillation is neither a sign for or against a tricuspid insufficiency. Diagnosis of this condition in auricular fibrillation is possible when the pulse wave is strong in the vein and may be felt or a murmur heard, or if the liver is pulsating. If, on the other hand, the pulse is very slight it is probably not tricuspid insufficiency. Positive venous pulse with regular heart beat is usually tricuspid insufficiency.

6. Büdingen, in a long article, takes up the question of feeding the heart by intravenous injections of glucose. He feels that by this way the nourishment of the cardiac muscle may be improved and thus

more powerful beats obtained. He mentions several different ways in which the sugar may be given. As a result of his work he feels that it does some good and recommends further investigation.

8. Rolly has studied the respiratory exchange experimentally and in man. He finds that there is no diminution in the respiratory gaseous exchange in anemias in dogs whether produced by bleeding or chemical means. Also in human toxic anemias there is no diminution. On the other hand, with all known forms of anemia there is frequently a distinct increase in the respiratory exchange, and especially in cancer and primary anemia. If the anemia in dogs is produced by hemorrhage the increase in the exchange is accompanied by marked diminution in red cells. In the chemically produced anemias the increase comes with a less severe anemia. In man with chlorosis and light anemias there is no increase of respiratory exchange. [C. F. JR.]

BAND 115. HEFT 1 AND 2. MAY 22, 1914.

1. *ZONDEK, H. *The Influencing of Blood-Pressure of Rabbits with Acute Experimental Nephritis by Means of Pancreas Extract.*
2. v. MONAKOW, P. *A Study of the Nephropathies.*
3. KOCHER, R. A. *The Amount of Albumen Destruction in Fever and in Hard Work.*
4. SAHLE, H. *Volume Measurement of the Human Pulse (Volumbolometry), Also a New Method for Measuring the Working Capacity of the Pulse.*
5. *BRÖSAMLEN, O. *The Relation of White Blood Corpuscles, Especially the Eosinophiles in Diagnostic Tuberculin Injections.*
6. *VEIL, W. H. *Clinical Phenomena in Cystic Kidneys.*
7. KÖUNECKE, W. *Nucleic Acid in Blood Diseases.*

1. Zondek has tried out the blood-pressure lowering effect of pancreas extract from cattle upon rabbits in whom an experimental nephritis had been produced. He produced the nephritis by means of uranium nitrates, potassium chromate, and corrosive sublimate. He found that in all three types of nephritis the pancreatic extract showed a decided blood-pressure lowering effect. In the nephritis caused by uranium and sublimate the blood-pressure is raised and this rise is entirely neutralized by the pancreas extract. The rise is by no means neutralized in the chronic nephritis. This difference he thinks fits into the theories that different substances cause different types of nephritis in these animals and that the rise in blood-pressure in the different types is caused by a different agent.

5. With people who clinically showed no evidence of tuberculosis the blood picture was apparently uninfluenced by the injection of tuberculin for diagnostic purposes. In tubercular patients the injection caused a leucocytosis and also an increase in eosinophiles. The reaction on the part of the leucocytes, and especially the eosinophiles, is more delicate than other clinical manifestations as a rule. The author considers it an anaphylactic phenomenon and that it corresponds to a protective reaction. Further investigation is necessary to discover if this fact has any therapeutic value.

6. Veil had an opportunity to study three cases of double cystic kidneys. He found a diminution in the ability of the kidneys to concentrate the urine. If the salt and nitrogen of the diet was kept low a normal amount of urine was present. On an ordinary mixed diet polyuria was present. The ability of the kidneys to excrete salt, nitrogen, water, milk sugar, potassium iodide, and phenolsulphonephthalein was limited. The average systolic blood-pressure was between 235-240 cm. of water by the v. Reclinghausen method. The evidence of heart hypertrophy existed. The blood showed normal concentration, osmotic pressure and non-protein nitrogen. [C. F., JR.]

BAND 115. HEFT 3 AND 4. JUNE 5, 1914.

1. HERMEL, H. *Observations upon Vasoconstricting and Vasodilating Substances.*
2. *V. MONAKOW, P. *Essay on the Knowledge of Nephropathics. Cases with Salt Retention.*
3. HAVERS, K. *Experimental Studies on Physiology and Pathology of Cholesterin Metabolism, with Special Regard to Pregnancy.*
4. *EDENS, E., AND FORSTER, W. *Diagnosis of Obliterating Pericarditis.*
5. EMDEN, K., AND ROTHSCHILD. *Chloroma and Its Relation to Myeloblastic Leukemia.*
6. LÖWY, J. *Refractory Determinations of Blood Sera and Transudates.*
7. LANDAU, M. *The Morphology of Secretion and Absorption in the Kidneys.*
8. JARISCH, A. *Pathological Anatomy of Perpetual Irregular Pulse.*
9. LONG, E. R., AND WELLS, H. G. *The Purin Enzyme in the Pneumonic Lung.*
10. *KOCHER, R. A. *Uric Acid Content of the Blood as a Symptom of Disease.*

2. Monakow in a long paper takes up the question of chronic nephritis in which salt retention is the main feature. The whole paper is too comprehensive to be reviewed in such short space. He emphasizes one point which is rather a new therapeutic plan. In cases with water retention, in which even theocin fails to increase the urinary output, he favors the use of urea, which has been known for some time for its diuretic effect, but which has not had very much use as a therapeutic agent in cases of chronic nephritis. He finds that it always produces some diuresis.

4. Edens and Forster take up a study of several cases of obliterative pericarditis in order to emphasize the fact that there is no one sign upon which one can surely make a diagnosis of this condition. They emphasize how one or the other of the classical signs may be lacking in any given case. The new points which their study has brought out are: The striking smallness of the jugular pulse, so much so that jugular tracings are difficult or even impossible to obtain; a similar difficulty in obtaining tracings from the esophagus balloon; disappearance of the auricular pulse in the esophagus tracing; and also smallness of and sharp descent after the v s wave.

10. Kocher takes up the increase in our knowledge of the uric acid in the blood, due chiefly to the different chemical methods which have recently been devised for determining the substance accurately. He has been studying the blood content of uric acid in a variety of diseases and finds that it is increased in severe renal disease with hypertension, in which cases other products normally put out by the kidney are retained, in gout where a real increase from pathologic conditions occurs, and in all conditions in which there is increased cell destruction, such as leukemia, pneumonia, carcinoma, and febrile cases. [C. F. JR.]

DIE THERAPIE DER GEGENWART.

JUNE, 1914.

1. MEISSER, E. *Prolonged Observation of the Sick.*
2. LENZMANN. *Further Studies on the Treatment of Scarlet Fever with Salvarsan.*
3. SOBERNHEIM, W. *The Treatment of Laryngeal Tuberculosis by Pfannenstiel's and Friedmann's Methods.*
4. VOGT, H. *On the Treatment of Pulmonary Tuberculosis in Children.*
5. MÜHSAM, R., AND HAYWARD, E. *Results with Friedmann's Remedy in Surgical Tuberculosis.*

Revue de Médecine.

June, 1914.

1. *Claude, H., Porak, R., and Rouillard, J. *A Clinical Manometer, with Especial Application to the Study of Cerebrospinal Pressure.*
2. *Caussade, L. *Cyto-diagnosis of Gastric Fluids, and Its Clinical Value.*
3. Lévy, L., and Bonlud, R. *Glycosuria Provoked in the Dog by Intravenous Injections of the Cerebrospinal Fluid of an Acromegalic.*

1. The authors have devised a simple and apparently very accurate apparatus for the determination of cerebrospinal pressure. It consists of an aeroid manometer, graduated in terms of centimeters of water, which is attached through a "three-way" arch to the needle. It is possible to determine in this way the fluid pressure before, during and after the removal of any quantity of fluid. The use of this apparatus has enabled the investigators to collect valuable data in regard to hypertension of cerebrospinal fluid, and its relation to diagnosis. The removal of appropriate amounts of fluid in such cases has a marked beneficial therapeutic action, which is, however, only palliative in the vast majority of instances. Investigations have also been made in regard to venous pressure of ascitic and pleural fluids.

2. Caussade has made a detailed study of centrifugalized sediments, the product of gastric lavage. After the stomach is rendered empty by expulsion of the fasting content or by lavage, the test is performed. Unfortunately, the author has neglected to state fully the details of this process, contenting himself with stating that he introduces "250 cm. of physiologic serum," which serves as a vehicle for obtaining the desquamated cells and at the same time acts as a preservative. The tube is passed at once, and the recovered material is centrifugalized, stained and studied. By this means the author has been able to make a diagnosis, in a high percentage of observations, of varying gastric conditions, including acute and chronic gastritis, ulcer, cancer, etc. In the latter instance the results are perhaps most striking and should be given in detail. Out of 20 cases of "gastric neoplasm" he has found "cancerous cells" in 18. In 10 of the latter the absolute diagnosis was made from the great clearness of the cell findings. The presence of laked and broken-down red blood corpuscles is of great help in the diagnosis of an ulcerative process, of benign or malignant origin. [L. H. S.]

Revue de Chirurgie.

June, 1914.

1. Moure, E. J., and Cannyt, G. *Cinical Considerations on So-Called Naso-Pharyngeal Polyps.*
2. *Moreau, L. *Anatomo-Chirurgical Researches on the Aponeuroses of the Axilla, in Their Relations with Adeno-Phlegmons of That Region.*
3. Brulé, M., Garran, H., and La Salle, Leg. *Latent Biliary Retentions in Certain Toxic and Infectious Lesions of the Liver.*
4. Bertein, P. *Intermittent Voluntary Subluxations of the Joints. (To be continued.)*
5. Potet, G. *Essay on the Congenital Malformations of the Limbs. Their Pathogenic Classification. (To be continued.)*

2. As a result of his investigations in the literature and the dissecting-room, Moreau regards every axillary aponeurosis as a continuation of the middle cervical aponeurosis. He reports seven cases illustrating the behavior of adeno-phlegmons in the axilla. [R. M. G.]

July, 1914.

1. *Morestin, M. H. *The Correction of Permanent Flexions of the Fingers Following Panaritia and Phlegmons of the Palm of the Hand.*
2. *Lacouture and Charbonnel. *The Operations for Pancreatic Lithiasis. Retroduodenal Pancreatotomy.*
3. Bertein, P. *Intermittent Voluntary Subluxations of the Joints. (Conclusion.)*
4. Potet, G. *Essay on the Congenital Malformations of the Extremities. Their Pathogenic Classification. (Conclusion.)*

1. Morestin describes the technic of his flap-plastic, and reports five cases of his personal treatment, with convincing illustrative photographic figures.

2. The authors report a case of pancreatic lithiasis of their own observation, and from the literature collect 19 other cases of this rare condition treated by various operative procedures. In this series of 20 cases there was a total mortality of 25%. [R. M. G.]

Annales De L'Institut Pasteur.

Vol. xxviii. No. 4. April, 1914.

1. Calmette, A., and Guerin, C. *Contribution to the Study of Antitubercular Immunity in Cattle.*
2. Calmette, A., and Massol, L. *Contribution to the Study of the Reaction of Fixation of Bordet and Gengou During the Course of Infection and Tubercular Immunization.*
3. *Levaditi, C., Danulesco, V., and Arzt, L. *Meningitis by Injection of Pyogenic Microbes in the Peripheral Nerves.*
4. Henry, A., and Cinca, A. *Experimental Study of Cenurose in the Rabbit.*
5. D'Herelle, F. *Coccobacillus of the Grasshopper. (Concluded.)*
6. Sergrut, E., and L'Heritier, A. *Work of Destruction of the Grasshoppers in Algiers by the Coccobacillus Acridiosum of d'Herelle.*
7. *Yamanouchi, F. *Experimental Study upon a Therapeutic Measure Based upon Stimulation of Phagocytosis.*
8. Vighes, H. *Influence of Lecithin and Cholesterin upon the Toxicity of Eggs and Ovaries.*

3. It has been pretty well felt in the past that the poison of rabies and poliomyelitis will travel up the course of a peripheral nerve trunk, and thus reach the central nervous system. These authors, working with the median nerve of the monkey have succeeded in producing acute cerebrospinal meningitis by the injection of an organism which was apparently the pneumococcus. The incubation time for the appearance of the meningitis was three days. Evidence of a neuritis preceding the meningitis makes it seem evident that the infection travels along the lymph spaces in the nerve sheath.

7. Substances to stimulate leucocytosis and phagocytosis have been tried in the past with varying success. In addition to formation of abscesses, colloidal silver and nucleate of soda have been used. In 1905 Doyen produced a preparation called mycolysive, which was supposed to stimulate both leucocytosis and phagocytosis. Yamanouchi has tried out this and the other two substances experimentally and on humans and finds that the mycolysine produces in man a leucocytosis which lasts from four hours to four or five days. The larger the dose the more the action, especially when given subcutaneously. The reaction is more marked in vigorous subjects. It also exerts the same power in rabbits. He then gives figures showing the relative ability of these different substances to produce leucocytosis and their power of phagocytosis. The mycolysine has been successful in protecting animals especially from staphylococcus inoculation and less so against the streptococcus. It does not act directly upon the organisms in any way but augments the opsonic power of the serum. [C. F., Jr.]

Miscellany.

THE INTERNATIONAL OPIUM CONVENTION.

IN former issues of the JOURNAL we have from time to time commented editorially on the work of the International Opium Congress in suppression of the mercantile traffic in habit-forming drugs. The latest session of this congress was in December, 1911, when a convention was drafted for ratification by the countries represented.

"There were twelve Powers party to this agreement—America, China, France, Germany, Great Britain, Italy, Japan, The Netherlands, Portugal, Russia, Siam and Persia.

"It was pointed out that it would be useless for these countries, the largest producers and users, to agree to radical measures for the international control of habit drugs so long as it was open to the citizens of states not represented at the conference to continue or take up the production and traffic. Therefore the congress adjourned on Jan. 23, 1912, with the understanding that the thirty-four governments of Europe and America which had not participated should be invited to join in the ratification of the convention. If this could not be accomplished by Dec. 31, 1912, another conference was to follow at The Hague to provide for the ratification of the convention. This date was subsequently postponed until July 1, 1913; then again to June, 1914.

"In the meantime the government of The Netherlands and the United States Government earnestly addressed themselves to the task of securing the adherence of the outside Powers. No doubt is entertained at the state department of the ultimate approval of the convention, though it is admitted that some effort may be made to amend it in certain respects. The next step then will be for the various governments to deposit at The Hague formal ratifications."

The session of the congress, so long and so often postponed, was finally opened at The Hague, Holland, on June 15, by Dr. London, minister of foreign affairs of The Netherlands, who announced in his opening address that Turkey and Servia had refused to sign the convention, and that Greece had made reservations with regard to her new territory. The United States representative at the congress is Mr. Charles Denby, American consul-general at Vienna.

"The convention provides that the contracting Powers shall enact effective laws or regulations for the control of the production and distribution of raw opium, unless laws or regulations on the subject are already in existence, and that, regard being had to the differences in their commercial conditions, the Powers shall limit the number of towns, ports, or other localities through which the export or import of raw opium shall be permitted. Further, that they shall take measures to prevent the export of raw opium to countries which have prohibited its entry, and to control the export of raw opium to countries which restrict its import, unless regulations on the subject are already in existence. The full text of Article X of the convention is as follows:—

"The contracting Powers shall use their best endeavors to control, or to cause to be controlled, all persons manufacturing, importing, selling, distributing, and exporting morphine, cocaine, and their respective salts, as well as the buildings in which these persons carry on such industry or trade. With this object, the contracting parties shall use their best endeavors to adopt, or cause to be adopted, the following measures, unless regulations on the subject are already in existence:

"(*a*) To confine the manufacture of morphine, cocaine, and their respective salts, to those establishments and premises alone which have been licensed for the purpose, or to obtain information respecting the establishments and premises in which these drugs are manufactured and to keep a register of them.

"(*b*) To require that all persons engaged in the manufacture, import, sale, distribution, or export of morphine, cocaine, and their respective salts, shall be furnished with a license or permit to engage in these operations, or shall make to the competent authorities an official declaration that they are so engaged.

"(*c*) To require that such persons shall enter in their books the quantities manufactured, imports, sales, and all other distribution, and exports of morphine, cocaine, and their respective salts. This rule shall not necessarily apply to medical prescriptions and to sales by duly authorized chemists.

"The Powers having treaties with China undertake, in conjunction with the Chinese government, to take the necessary measures to prevent the smuggling into Chinese territory, as well as into their Far Eastern Colonies and the leased territories which they occupy in China, of raw and prepared opium, morphine, cocaine, and their respective salts. The Chinese government on their part, are to take similar measures for the suppression of the smuggling of opium and of the other substances referred to from China to the foreign colonies and leased territories. The conference at which the convention was signed, considered it desirable to direct the attention of the Universal Postal Union to the urgency of regulating the transmission through the post of raw opium; to the urgency of regulating as far as possible the transmission through the post of morphine, cocaine, and their respective salts, and other substances, and to the necessity of prohibiting the transmission of prepared opium through the post. The conference also considered it desirable to study the question of Indian hemp from the statistical and

scientific point of view, with the object of regulating its abuses, should the necessity thereof be felt by internal legislation, or by an international agreement."

It was agreed on June 19 that the convention can become operative as soon as the adhering Powers have ratified it, despite the abstention of some other Powers. The conference adjourned on June 25.

It is sincerely to be hoped that after so much delay so important a measure of international concern may be successfully put in action by the ratification of all the signatory Powers.

A PILGRIMAGE TO AVICENNA'S TOMB.

In the July issue of the *St. Bartholomew's Hospital Journal** is an account of a pilgrimage by Dr. A. R. Neligan, of Teheran, to the tomb of Avicenna, the Arabic physician, at Hamadan.

"Abu Ai al Hussein ibn Abdullah abn Sina was born near Bokhara in 980 A.D. At 16, after studying mathematics, philosophy, metaphysics, and medicine, he was already practising as a doctor. At 17 he was appointed physician to the Amir of Bokhara. This post gave him access to the celebrated library of Bokhara, and thus enabled him to pursue his studies. After travelling in northeastern Persia he settled at Hamadan, where he spent the rest of his life. He became physician to the ruling prince, Shams-ed-Dowleh.

"Like many a Persian doctor of the present day, Avicenna took to politics and became a Minister. The sea of Persian politics has always been particularly stormy, and therefore it is not surprising that Avicenna was often in peril of his life, and was at one time thrown into prison. After a time he made his escape from Hamadan and took refuge in Isfahan, where the governor welcomed him and made him his physician. In that capacity he made several campaigns, and in the course of one of these, which was directed against Hamadan, he was attacked by colic, and thus it came to pass that he died in the town from which he had fled and was buried there.

"Wherever Avicenna was and in whatever circumstances he found himself he was an indefatigable writer. His varied adventures did not prevent his going on with his great treatise, the *Kanun*, or Canon of Medicine. In that work, which was divided into five books, Avicenna collected all that was best in the medical knowledge of his time. It was the text-book at the universities of Louvain and Montpellier up to the middle of the seventeenth century, and it is read in Persia, Arabia, and India at the present day. It was taught in the royal university at Teheran as recently as twenty years ago. It was translated into Hebrew and Latin, and the Latin version went through thirty editions. Avicenna is said to have written in all more than 100 books, most of them dealing with medicine, but others with logic, philosophy, music, natural history, astronomy, and physics.

"His grave is in a simple brick building near the steep banks of the river which flows through Hamadan. A little mausoleum of fire-burnt bricks with a mud dome stands at one end of a small compound, surrounded by a low stone and mud wall. The building is square, but inside there are small arches at each corner, which give it the appearance of being eight-sided. The internal measurements are as follows: Floor, 15 ft. by 15 ft.; apex of dome from floor, 16 ft. The floor is paved with large square bricks. Immediately opposite the doorway is the tombstone, 49 in. long, 21 in. wide, and 24 in. high. The inscription is carved in large bold characters. It begins with the usual invocation, 'To Him who is and does not die'; this is followed by a verse from the Koran reciting the virtues of the Almighty. Then come lines of verse, in the translation of which Dr. Neligan acknowledges the help of his friend Moin-ul-Vazareh: 'Worthy testimony upon earth of the omnipotence and wisdom of God, Abu Ali Sina sprang from non-existence into being in the year 373. He had mastered the sum total of knowledge in 391; in 427 he bade farewell to this transitory world.' Then comes the usual conclusion to epitaphs on the graves of Mohammedan sages or celebrated men: 'The death of Sheikh Abu Ali Sina, may his tomb be surrounded by light! 427.'"

* Quoted in the *Lancet* of July 25.

MEDICAL SECTIONS OF THE LYONS EXPOSITION.

The Lyons exposition, which was inaugurated on May 22, and is intended to continue through the current summer, has a number of sections devoted to various aspects of public health. These were described in part as follows in a letter by Alvan F. Sanborn to the Boston *Transcript* from Draviel, France, on July 23.

"The section of hospitals and asylums includes several pavilions, eight rooms of which are devoted to an illuminating comparative exhibit of ancient and modern hospital methods. Over against a faithful reproduction of a seventeenth-century ward of the Lyons Hotel-Dieu (with an enormous bed for several patients and a collection of antiquated surgical instruments and pieces of orthopedic apparatus, recently discovered in the garret of that venerable institution) and a lunatic's cell from the Antiquaille Asylum, are a modern hospital ward and operating room and models of new hospitals of Grange-Blanche and René Sabran (tuberculous children) at Grin in the Department of Var. Other rooms of this section are occupied by a radiological laboratory (to be utilized for experiments, by a radiological congress), an isolation

box installed by the Pasteur Institute, model ambulances and dispensaries and exhibits of various training schools for nurses, of the Red Cross Society, and of fully a hundred other medical or sanitary societies and enterprises in all sections of France.

"There is a section of infectious diseases, subdivided into the following classes: infectious or parasitic diseases of man, infectious or parasitic diseases of animals, infectious or parasitic diseases of plants; animals as propagators of disease and means of protection, vaccines and serums, anti-variolus vaccine, cancer, rabies and anti-rabic treatment.

"These divers classes depict most vividly the prodigious social and economic, as well as scientific importance of the winning fight that has been carried on against microbian or parasitic diseases since the first triumphs of Louis Pasteur.

"Special sections of the exposition are also consecrated to milk, hygienic drinks (appellation which means in France wine and beer), cleanliness and care of the body (with a retrospective dating back to the Roman baths of Lugdunum), hygiene and protection of labor, school hygiene, physical culture, puericulture, consumers' leagues, the crusade against alcohol, and the crusade against tuberculosis.

"The tuberculosis section includes practically all the French anti-tuberculous agencies. It is divided into six classes: the Koch bacillus and lesions, tuberculosis hospitals, tuberculosis sanatoria, tuberculosis dispensaries, industries related to tuberculosis" and preservation of children from tuberculosis,—each of which reveals, from a different point of view, the progress that has been made in diminishing the ravages of the terrible white plague. The section is under the patronage of the statesman-sociologist, Léon Bourgeois, and the venerable pathologist, Dr. Chauveau, and under the immediate direction of Dr. Paul Courmont, the successor (and for many years the collaborator) on the Lyons medical faculty of the eminent and beloved tuberculosis specialist Arloing."

APPOINTMENTS.

COLUMBIA UNIVERSITY.—*Dr. Homer F. Swift* has been appointed associate professor of medicine at the College of Physicians and Surgeons and associate attending physician at the Presbyterian Hospital, New York.

FORSYTH DENTAL INFIRMARY.—The trustees have appointed *Dr. H. DeWitt Cross*, of Boston, director, and *Dr. William Z. Hill*, of Philadelphia, assistant director. Other appointments are as follows. Consulting roentgenologist, *Dr. A. W. George;* roentgenologist, *Dr. Albert Kinley;* oral surgeons, *Dr. Harry B. Shuman, Dr. L. M. S. Minor, Dr. B. Strout;* permanent staff, for full time, *Dr. Andrew P. Bulger, Dr. Dwight R. Clement, Dr. Raymond H. Hanrahan, Dr. Harold F. Hart, Dr. J. Warren Holt, Dr. Joseph A. Kelly, Dr. George F. Marsh, Dr. Harrison A. Parker, Dr. J. Mark Smith, Dr. Robert A. Spratt, Dr. Henry F. Stevenson, Dr. Daniel J. O'Meara, Dr. Joseph A. Manning, Dr. George P. Pendleton* and *Dr. Lawrence M. Staples.*

UNIVERSITY OF GÖTTINGEN.—*Dr. Eugen von Hippel*, of Halle, has been appointed professor of ophthalmology.

UNIVERSITY OF PENNSYLVANIA.—*Dr. A. I. Ringer* has been elected assistant professor of physiological chemistry.

UNIVERSITY OF STRASSBURG.—*Dr. Franz Keibel*, of Freiburg, has been appointed professor of anatomy in succession to Dr. G. A. Schwalbe.

UNIVERSITY OF WISCONSIN.—*Dr. Paul Franklin Clark* has been appointed assistant professor of bacteriology.

RECENT DEATHS.

DR. CHARLES T. BUFFUM, of New York, died in the Presbyterian Hospital on July 21, in his 62nd year. He was a native of Brooklyn, N. Y., and was graduated from Harvard in 1874 and the College of Physicians, New York, in 1878. After studying for some time in Europe he returned to New York, and for many years was in the service of the Health Department.

DR. MARCUS KING, of the borough of Bronx, New York City, died on August 3, at the age of 42. He was born in Minsk, Russia, and was graduated from the medical department of the University of Pennsylvania in 1890.

DR. JOHN HENRY GRIFFITH, of Phillipsburg, N. J., died on July 21, at the age of 72. He was born in Monmouth County, N. J., and was graduated from the Jefferson Medical College in 1870. Dr. Griffith was mayor of Phillipsburg in 1882 and 3.

BOOKS AND PAMPHLETS RECEIVED.

A Text-book of Military Hygiene and Sanitation. By Frank R. Keefer, A.M., M.D. W. B. Saunders and Company, 1914.

A Text-book of General Bacteriology. By Edwin O. Jordan, Ph.D. W. B. Saunders and Company, 1914.

Letters to a Doctor and Others by a Lover of Truth and Justice. Wyman and Sons, Limited. London, 1914.

The Question of Alcohol. By Edward Huntington Williams, M.D. The Goodhue Company, New York, 1914.

Public Health Reports, Vol. 29, No. 31, July 31, 1914.

Hygienic Laboratory, Bulletin No. 92, June, 1914. Gaseous Impurities in the Air of Railway Tunnels. By Atherton Seidell and Philip W. Meserve.

Atmospheric Air in Relation to Tuberculosis by Guy Hinsdale, M.D. Smithsonian Miscellaneous Collections, Vol. 63, No. 1.

Les Caractères Médicaux dans L'Écriture Chinoise. A. Maloine, Editeur, Paris, 1914.

Psychopathology of Everyday Life. By Prof. Dr. Sigmund Freud, LL.D. Translation by A. A. Brill, M.D. The Macmillan Company, New York, 1914.

A Text-book of Medical Diagnosis. By James M. Anders, M.D., and L. Napoleon Boston, M.D. B. Saunders Company, 1914.

The Student's Handbook of Gynecology. By George Ernest Herman. William Wood and Company, 1914.

Treatise on Diseases of the Skin. By Henry W. Stelwagon, M.D. W. B. Saunders Company, 1914.

Chronic Colitis, Its Causation, Diagnosis and Treatment. By George Herschell and Adolphe Abrahams. Longmans, Green and Company, 1914.

Practical Sanitation, a Handbook for Health Officers and Practitioners of Medicine. By Fletcher Gardner, M.D., and James Persons Simonds, B.A., M.D. C. V. Mosby Company, 1914.